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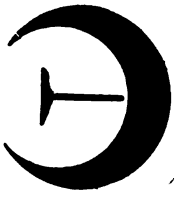

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MAMMARY SUBINVOLUTION.

By J. D. Bloom, M. D., of New Orleans, La.

The process of a natural physiology to the purpose of provision, that is recreative, has a normal course in its doing of timely purpose and a true perfectness.

In the Mammary Glands, in instance, that is purely correlative in function, become larger at the onset of the pregnant state, beginning through the first menstrual suppression, reasoned for by the provision that is for a life, and health giving. Anticipative in its economy of function is this healthy concomitant development, inherent in purpose and marked as it is, by changes in growth that are normal. Subinvolution is a disturbed natural return to the perfect condition and makes a reasoning for this vulnerability of the organ.

Emmet in his memorable comment on a like condition of the uterus justified, as it was, by a practical experience told that its cause was trauma in the nature of a laceration that interfered with a healthy process.

Tissue resentments are represented in healthy life and speak that "Nature is sinned against" in a return physiology that is dwarfed or diverted. Pathological doctrines are manifestly more faulty in a mastitis that concerns the process of child-bearing and which is merely an altered function. As a consequent nutritive disturbance, it is little understood and in limit of condition not definable. The fibrous tissue in this instance of perverted physiology is characterized by lobulated areas of a degree of firmness that attract attention and from which there is naught in harm, is surprisingly a frequent attendant at or about the menopause. The find is minus the symptom of pain or tenderness that differentiates the condition normal from disease; it is not a degenerate gland epithelium, but of the nature and disposition of what is degenerative. That the formation of tissue that is fibrous, in excess of the normal, must be looked upon as a condition vulnerable toward a growth formation, either alone or of resentment, is a disturbed life condition that clinical and histological findings affirm to the individual.

Involutionary periods either at the menopause, following the period of lactation or pubescent period, are measurable; in the latter two more frequently of an individual lobule. Mastitis of a subacute type is more visibly existent in the first state mentioned of a normal physiology. That the condition, lobular in character, exists in the single female, is the review of nodulated lumps that have been removed. Vulnerability, with the transitional, is seriously in thought and a clinical watchfulness is to encourage the doubt that at times is ill-determined in prophesy toward the in-operative.

A malignant disposition implies a cell nature that is an entity and concerns what is a cancerous transition that is individual and, in instances, awakened by any tax. So it is that a chronic or sub-acute process may arouse this latent disposition, that is in the nature of life in its being, and ever rampant in its physiology.

The condition adds a hesitant indecision, in that there is no manifest evidence decisive of either the cancerous or inflammatory and timely observation alone can guide us.

Truly, the indistinguishable between the two conditions in their course is vulnerability. Appropriately is to be considered the sympathy between conditions

of the mammae, the uterus and its adnexia that seems of warrant particularly when connected with maternity, for a full

investigation, as an aggravation of either, in trauma, is in these conditions normal sympathy.

A perfecting influence in structural build is inferred only through morphology or heredity, as orderly function in normal life are conditions other than incidental. Transitory as may be physiological engorgement, this condition represents the change of what seems the inflamed, telling of a thwarted maternal process—not a deposit, but a glandular influence.

Of the photograph presented, a find, an individual 50 years of age, was made at the menopause and associated an alarm in fear of a possible danger. In this state of mind, the patient consulted me and was given simple alteratives and a watchfulness that associated an improvement through a possible dual effect. The case plainly shows that the physiological must be of force as a basic reasoning in every condition of altered function or growth for "What's done we partly may compute, but know not what's resisted."

1215 Maison Blanche Bldg.

PUBLIC INVESTMENT IN TUBERCULOSIS WAR.—Out of nearly $20,000,000 spent last year in the treatment and prevention of tuberculosis in the United States, 69.3 per cent. of the money was derived from public funds, either federal, state, county or municipal. These are some of the interesting figures given in the annual statistical statement of the National Association for the Study and Prevention of Tuberculosis. The statement is based largely on actual reports received from anti-tuberculosis agencies throughout the country, but where reports were not available, the figures have been estimated.

Treatment of tuberculous patients in the more than 500 sanatoria and hospitals of the country and the construction of such institutions cost over $18,000,000 of the total expenditure. Care of patients in dispensaries and open-air schools cost about $825,000. Anti-tuberculosis associations and committees spent nearly $675,000 in furthering their work of organization and education, while state and local boards of health and special tuberculosis commissions spent over $250,000.

More than $13,800,000 or 69.3 per cent. of the total expenditures came from public funds. The National Association points to this growing increase in the spending of public money for tuberculosis as one of the most significant facts in the report, as it indicates the shifting of the burden of institutional care of consumptives from the private purse to the general public purse, where it right belongs. Since 1909 the percentage of public money spent in tuberculosis work has increased from 53.5 to nearly 70 per cent.

New York State spent more money in tuberculosis work than any two other states, due largely to the increased and growing activities of city and county governments in building adequate hospitals for consumptives.

CRIMINAL SOURCE OF DISEASE.

By A. T. Cuzner, M. D., Gilmore, Fla.

Inasmuch as the criminal class is on the increase, and out of all proportion to the growth of population—and further—we know that the criminal and immoral classes are the most prolific source of disease; it behooves us, as conservators of the health of our communities, to stop and consider, whether we cannot arrest, or limit, this development of disease.

Now we are most liberal in our appropriations for the investigation of the diseased conditions we denominate *Consumption and Cancer.* Like the dog in the fable, we lose the substance while seeking the shadow.

To illustrate.

Consumption is the cause of from five to eight per cent. of the deaths in the United States, according to locality.

In thirteen prisons, located in different parts of the country, we find the death rate from consumption to average 59.9 per cent., thus proving them to be breeding grounds for that fell disease of the human race.

However, we must not forget that the criminal classes are more liable on account of their dissipated habits, and vagabond lives, to consumption.

Tuberculosis, under certain conditions and environments, is certainly contagious.

A regard for the welfare of society, and for our own particular portion, should compel an earnest effort on the part of our noble profession to irradicate, or limit, the further inroads of this disease.

We, as a profession, are "our brother's keepers."

Just here we quote from "Carlyle."

"A poor Irish widow, her husband having died in one of the Lanes of Edinburgh, went forth with her three children asking for help, first at one place, then at another.

Being refused of all, and helped by none, she died of Typhus, and in so doing, left a legacy of infection, whereby seventeen others died of this disease.

Thus she proved her sisterhood; her typhus fever kills them; they were actually her brothers; though denying it!

In the physical world we find manifested by the operations of nature a law denominated by Darwin, "The survival of the fittest."

Stock breeders, and agriculturists in general, by following the teachings of this law, obtain splendid results from their enterprises.

Are not humans of more value than cattle?

Would it not be better for us to stop and consider whether it is the part of wisdom to breed, propagate, or foster indirectly, that which is evil to the community, or to endeavor, professionally, to restrain and diminish such evil if possible?

ALCOHOL.

Take the drink habit—known to be the parent of so many diseased conditions.

Why do we practically indorse and encourage this most prolific source of disease, in and by our medical practice?

Is not our "Materia Medica" well equipped to meet the supposed indications for its use?

Have we not the alkaloids, strychnine, glonoin, cactine, digitaline and strophanthin to call upon when morbid indications call for its supposed use?

EUGENICS.

Just here I would pause to consider how far we can interfere with individual freedom for the purpose of eradicating disease.

Is it the proper thing, and can we allow one individual, or even a number of individuals, a minority, to injure a community, or race, in order that they may enjoy a supposed benefit?

The average individual will distinctly answer "NO!"

Hence we consider that no gainful oc-

cupation, or pursuit of life, of known injury to a community, and a financial tax on its resources, should be legalized.

Again, Shall we, as professional conservators, of the public health, have a supervisory oversight, under proper regulation, of the mating of individuals?

Once more—

Shall we allow our known criminal classes to propagate and breed offspring with inherited criminal instincts, to the great injury of the community and State?

Have not the majority of our prisons been proven hot-beds of crime and disease, instead of what they were intended for, schools of prevention and of reform?

From the time of Noah we find it enunciated as a principle of action, "Whoso sheddeth man's blood, by man shall his blood be shed." Gen. IX:6.

We think for wilful murder the criminal owes a life to the community.

Now it is a question in our mind, if it is not better to use this forfeited life for the benefit of the community.

Does the death penalty, when inflicted by the law or by mob-violence, deter or prevent others, from criminal assault in our Southland?

From the records of the past twenty-five years it would appear otherwise.

We believe by the unsexing of criminals we would obtain two worthy objects.

First: We would prevent any further criminal assaults.

Second: We would no longer fear an inherited tendency to crime in their offspring.

In the criminal assailant, we obtain the following results:

We prevent a repetition of the offense; and, second, we have a chance of reforming the assailant. (The vicious Bull becomes the docile Ox.)

Again, There is nothing a man values more than his sexual manhood. Nay! many prefer to lose their life to losing their virility.

Now one step further in this discussion.

Would it not be better for mankind if we could restrict the breed of the congenital, deaf, dumb, blind and incurable degenerates, by unsexing such in early childhood, before the sexual organs become active?

In our opinion this would be preferable to restricting the number of offspring, the result of marriage.

The Scriptures teach us to "Increase and multiply."

These thoughts are presented for the consideration of my brethren who will come in contact with them, and likewise to promote discussion on this very important subject.

ALCOHOLISM.—B. L. Spitzig, Cleveland (*Journal A. M. A.*), offers a physico-chemical theory of alcoholism. He has observed that many tipplers begin at an age when boyish habits and tastes yield to those of a man. At maturity the demand for carbohydrates is materially lessened and the appetite for alcohol replaces it in the tippler. There is sometimes a positive aversion to sugar. "The chemical relation of carbohydrates to alcohol is significant. Dextrose is convertible to carbon dioxid and ethyl alcohol. The combination of carbon, hydrogen and oxygen makes for increased nutrition whether it be derived from alcohol or indirectly from sugars and starches. The human organism when deprived of sufficient sugar seems of necessity to demand an increased supply of alcohol. Conversely, when the body is satiated with alcohol it has little need for carbohydrates." Based on this theory his treatment for chronic alcoholism consists in gradually withdrawing alcohol and replacing it in the diet with sugar. When there is a strong distaste for this he uses lactose, a dram every two hours, given in powder for the psychic effect. The gastric and nervous disturbances are appropriately treated and, after self-confidence is gained, all medication ceases and sugar is gradually reduced. With care, glycosuria can usually be avoided.

A CASE OF CONGENITAL APRON OF THE PALPEBRAL CONJUNCTIVA.

By HENRY H. TYSON, M. D., New York.

In 1899 A. Schapringer reported* eight cases of congenital apron of the palpebral conjunctiva observed by him and referred to two other cases described by Harlan** and de Schweinitz,† which he considered were similar cases, although they were not reported as such by the authors. These cases being all that were found by me in the literature on the subject, the report of an additional case may prove of interest.

Mrs. R. G., aged forty years, a native of Unguar, Hungary, applied for treatment at the New York Ophthalmic and Aural Institute on account of poor vision in her left eye. V. O. D.=20/30, with +0.75 D.=20/20; O. S.=3/200, with —10.00 D.=20/100. The fundus of the right eye was normal, while in the left eye there was sclerochoroiditis posterior.

Upon eversion of the upper lid of her left eye the tarsal portion of the conjunctiva presented an appearance as if a fold of conjunctiva, extending nearly the entire length of the lid, 28 mm. long and 5 mm. wide, near the fornix, had been pinched with a pair of forceps, had been lifted up and then pressed back against the center of the tarsus, and had adhered to it along the upper edge of the fold, which was slightly irregular in contour. Near the temporal margin of the palpebral conjunctiva, 3 mm. from the external canthus, was a horizontal slit-like opening, 4 mm. long, that admitted the largest Bowman probe, which could be passed freely between the layers of the conjunctival fold and the tarsus for a distance of 25 mm., almost to the inner angle of the eye. About midway, a fibrous thread or band could be detected which caused a slight narrowing at that point. The color of the fold or apron appeared a trifle gray compared with the normal conjunctiva, but was transparent enough for the probe to be seen through it and observed the entire length. No other malformation of the lid was present, nor was there any evidence or history of trauma, trachoma, or conjunctival disease. The lids of the right eye were normal, excepting a slight vertical groove in the upper tarsus near the inner angle.

In addition to the cases reported, and the one here presented, Dr. Schirmer, in a personal communication, stated that he had seen two cases in Europe of partial conjunctival apron, but that neither one was as complete as this case.

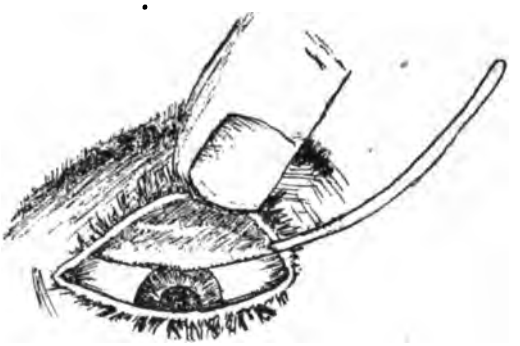

Fig. 1.—Congenital apron of the palpebral conjunctiva.

As to the explanation for the occurrence of the congenital apron of the palpebral conjunctiva, the one given by Schapringer is as satisfactory as any. He stated that, admitting that during the embryonal life the amnion adhered to the layers from which the lids would be formed, and that, by pulling, a fold in the future conjunctiva originated, later the amnion separated from these tissues and the fold remained permanently.

In all the cases except two the apron was partial. It occurred on both the upper lids in three cases, on the right upper

*Zeitsch. f. Augenheilk., 1899, Bd. ii, p. 41.

**Trans. Amer. Ophth. Soc., 1895, p. 418.

†Ibid., 1895, p. 422.

lid alone in two cases, on the right lower lid (in conjunction with left upper) in one case, and on the left upper lid alone in five cases. Frequency of occurrence was about equal in both sexes. None of the cases complained of anything in connection with the malformation of the conjunctiva, the condition being observed during the regular course of examination of the eyelids. A striking coincidence is the fact that, with the exception of the cases mentioned by Harlan and de Schweinitz, they all came from Russia, Galicia, Austria, and Eastern Europe.

USE OF HEROIN SPREADING RAPIDLY AMONG DRUG FIENDS.—According to information gathered by the U. S. Department of Agriculture, there has been a sudden and very significant increase in the use by persons with a drug habit of the little-known but very dangerous drug called "heroin." The sales of this drug have recently increased greatly, particularly in those States which have ragid laws preventing the indiscriminate sale of morphine and cocaine. Investigation of the subject establishes the fact that many drug victims who formerly used morphine and cocaine and who under the new laws find it difficult to obtain these substances have begun using heroin, the sale of which is not as yet as carefully restricted under State laws. The drug is said to be fully as dangerous as morphine and by many is held to be much worse, for the reason that it occasionally kills the victim outright and its habit is far harder to overcome than the use of the other drugs. The Department, pending further action, specially warns all people who are unfamiliar with the drug to avoid all preparations containing the substance and to take it only on the prescription of reputable physicians.

Heroin, the consumption of which by drug takers has recently increased so markedly, is a derivative of morphine, the opium alkaloid. It is known in chemical parlance as diacetyl morphine, and it is frequently found as a constituent of a number of proprietary drugs. Its use seems to be especially notable in parts of Pennsylvania. This year the coroner's office in Philadelphia county has held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and was on a heroin debauch and took an overdose. The substance apparently is far more dangerous for drug users than morphine or cocaine. Drug fiends apparently are able to consume relatively large quantities of the other two drugs, but any sudden and material increase in the amount of heroin taken is very liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store was located in an undesirable section of his city has been buying heroin tablets in 25,000 lots.

The labels of proprietary and other medicines purchased by laymen should be carefully scrutinized for a statement which is required by the National Food and Drugs Act of the quantity or proportion of heroin, or any derivative or preparation thereof.

The word "heroin" on any label should be regarded as a danger signal, according to the experts of the Department.

"It was once remarked," said Dr. E. P. Lyon, "that if you give Jacques Loeb a collar box and a piece of string, he will make a discovery. On the other hand, I know a man who, three years ago, could not do any work because his Edinger apparatus had not come; two years ago he was waiting for material from Java; last year he found he needed a dark-stage illuminator and a micropolariscope. Now he is waiting for a new laboratory building. These extremes illustrate the man and equipment proposition better than many paragraphs of theory." And the same is true of the doctor. The really resourceful man, 'way out in the backwoods, will do more for his patients with his nine-vial case than many a city "professor" with a well-equipped hospital and a corps of nurses to help him.—From *Medical Brief.*

ANESTHETICS.

By CHARLES NEVERS HOLMES, Boston, Mass.

Natural sleep is the simplest and most soothing of all anesthetics, so to speak; and under the spell of natural sleep we are unconscious of our ordinary cares and pains. When we faint, collapse, or fall into a deep trance, we are, as it were, under the influence of a more profound anesthetic; and in such a state be subjected to a minor or even major surgical operation without experiencing any pain. Nevertheless, natural sleep is not deep enough for even a light surgical operation, and faints, collapses or trances do not usually occur at the necessary time. Physicians are, therefore, obliged to administer certain preparations to induce an artificial and profound sleep so that the patient will remain unconscious of any discomfort during a surgical operation. These sleep-inducing preparations are popularly known as "anesthetics," and such anesthetics are well known by name or by experience to most of us.

But in addition to these sleep-inducing preparations, there are other kinds of anesthetics that eliminate all sense of bodily pain by direct application to or injection under our skin. This may be called the second class of anesthetics, and, as now perfected, can be used either for minor or for major surgical operations. Like the first class of anesthetics, such applied or injected preparations are well known to most of us, although the first class of anesthetics has on the whole been more extensively used and more widely advertised. Briefly described, this first class includes such anesthetics as "laughing gas," ether and chloroform; the second class such preparations as ice, ether and cocaine.

Although our 20th century anesthetics are vastly more effective and satisfactory than were the means taken for deadening or obliterating surgical agony centuries ago, the people of olden times certainly possessed preparations capable of inducing semi- or total anesthesia. It is very probable that for thousands of years the natives of India have used Indian hemp, either by smoking or taking into the stomach, in order to obtain relief from pain. It is also a fact that the Chinese, for more than 1,500 years, used a preparation of such hemp, called "mayo," as a sort of anesthetic; and the fondness of this race for opium from the poppy plant is very well known. Strong alcoholic drinks have been taken for centuries to dull natural pain as well as surgical agony; and it has been handed down that a physician of the 13th century, Hugo de Lucca, used a preparation of the plant mandragora as an anesthetic. Other anesthetic preparations and means, some of which science may not know today, were without doubt administered to patients of early times by the doctors and surgeons of those centuries; but the first real advance in the discovery and perfection of anesthetics occurred during the 19th century—when Long, Wells, Morton, Simpson, and others, were pioneers in finding or exploiting the invaluable qualities of ether, nitrous oxide, and chloroform in alleviating and eliminating the dread and agony of surgical operations.

Of these three alleviations of modern surgery, sulphuric ether, or ether as it is popularly and simply called, was known about the 13th century, and at a later date its preparation and properties were described by Basil Valentine. It was not at first, however, designated by the name "ether," this name or "spiritus æthereus" being given it in 1730 by Frobenius. In 1795 it is reported that Dr. Pearson used the vapor of ether; and the fact that this preparation would produce insensibility to pain was proven by Dr. Godwin in 1822, Dr. Mitchell in 1832, Dr. Jackson in 1833 and Dr. Bache in 1834. In 1842, Dr. Crawford W. Long of Georgia administered ether vapor during some of his dental work; but at the time made no general public announcement of the fact. Four

years later, Dr. William T. G. Morton, a Boston Dentist, consulted a certain Dr. Wells respecting the properties of nitrous oxide or "laughing gas," and was referred by Dr. Wells to a well known chemist, Dr. Charles Jackson. Dr. Morton had in mind to use nitrous oxide in his dental work; but Dr. Jackson advised him to use instead sulphuric ether which was easier to obtain. Accordingly, Dr. Morton administered ether in two or more dental cases with such excellent results that, on the request of Dr. John C. Warren, he gave a public demonstration of his discovery at the Massachusetts General Hospital, October 17, 1846. Dr. Warren performed the operation and the administration of the ether proved a great success. However, Dr. Morton endeavored to conceal the formula of his anesthetic, securing a patent for the preparation which he named "Letheon." "Morton's anesthetic," nevertheless, did not long remain a secret, for Dr. Bigelow discovered what it really was, and at once forwarded the news to London, from which city it spread rapidly all over Europe. Dr. Bigelow had communicated with a certain Dr. Boott, and, so, the first operation in England under ether took place at this latter doctor's house in London, December 19, 1846. Two days later Dr. Squire administered ether to 2 patients at the University College Hospital; and henceforth ether was generally used as an anesthetic on the Continent until the discovery of chloroform by Dr. Simpson, the following year.

Almost all of us, probably, are very familiar with the odor and even the taste of sulphuric ether. Not so many of us, however, are acquainted with the method of its manufacture and production. Briefly described, ether is made by the action of sulphuric acid on alcohol. In other words, a certain amount of alcohol is poured into a retort and about an equal volume of sulphuric acid is added. Then, a degree of heat is applied to the mixture, and soon an ether-vapor combined with some alcohol-vapor is produced. At the same time a stream of alcohol is constantly poured into the retort, while a regulated temperature of about 266 degrees F. is continually maintained. When some 5 volumes in all of alcohol have been added, the temperature in the retort is raised to 286 degrees F., at which degree of heat impurities begin to mix with the evaporating ether and alcohol. Sulphuric ether, so prepared, contains not only some alcohol but some sulphurous acid and water, all of which may be removed by treatment with a solution of chloride of calcium and by redistillation afterwards.

Chemists have named this preparation "$(C_2H_5)O_2$." Most of us are aware that it is a colorless, transparent, volatile liquid, possessing a fragrant odor and a fiery, then cooling taste. Its "sp. gr.," or weight compared with water, is 72/100th, and it boils at 96 degrees F., forming a vapor more than 2½ times as dense as air. As is well known, it both volatilizes and vaporizes very rapidly, producing intense cold; and at the same time it is exceedingly inflammable, burning with a yellowish-white color. As would be expected, it mixes with alcohol in all proportions; it absorbs about ⅛th of its volume of water; is an excellent solvent for oils and fats; and, owing to its rapid evaporation, is often used to make "freezing mixtures."

Nitrous oxide or "laughing gas" is not as ancient a discovery as sulphuric ether, but chemists have known of its existence for about a century and a half. Priestley who discovered oxygen, was the first to prepare nitrogen monoxide, around 1776; and Sir Humphry Davy suggested its use as an anesthetic in 1800. In 1844, Dr. Horace Wells, a dentist of Hartford, Conn., whom Dr. Morton afterwards consulted respecting the qualities of nitrous oxide, happened to be present at a popular entertainment given by a Mr. Colton, a lecturer on chemistry, and noticed that one of the audience who had taken some of the lecturer's "laughing gas," had received an injury while he was under its influence without being conscious of it. Upon thinking the matter over, he decided to try an experiment, and had one of his own teeth drawn by a friend when he himself was under the influence of the gas. The extraction took place without any pain or discomfort to Dr. Wells who thereupon began to use this gas in his

own practice. He even gave a public demonstration of the anesthetic qualities of nitrous oxide at the Harvard Medical School; but this demonstration unfortunately proved an utter failure. Nevertheless, Dr. Wells continued to use "laughing gas" in his dental work; but it is said that the disappointment over his lack of success in convincing people of the value of his discovery caused him to commit suicide, on January 14, 1848.

After the death of Dr. Wells, public and private interest in nitrous oxide as an anesthetic almost ceased, and it was not until the 'sixties that there came a revival in its favor. This revival was due to the activity of Mr. Colton, the lecturer on chemistry at whose popular entertainment Dr. Wells had obtained his idea respecting the value of this gas as a dental anesthetic. In 1863, Mr. Colton formed an association for the performance of dental operations under "laughing gas," and reports concerning the successes of these operations were so favorable that dentists began again to be interested in nitrous oxide. In 1864 Mr. Rymer, a London dentist, administered this gas successfully; but it was not until 1867 that Mr. Colton really revived a permanent public and private interest. On March 31, 1868, a Dr. Evans visited London and while there gave a most successful demonstration at the Dental Hospital of the anesthetic value of nitrous oxide. This demonstration caused a most favorable opinion of this gas; and soon afterwards nitrous oxide took its present preeminent place as a safe and satisfactory anesthetic in cases of dental surgery.

Most of us have at some time "taken laughing gas;" but most of us who have, do not know much about its preparation and general qualities. One of the methods of preparing it is by heating ammonium nitrate to temperatures varying from 170 to 260 degrees C. It is, of course, a colorless, transparent gas, possessing a sweetish odor and taste. It is heavier than water, having a specific gravity of 1 52/100th, and can be turned into a liquid under a pressure of 30 atmospheres. As supplied to dentists, nitrous oxide comes in steel or iron cylinders, fifteen ounces of the liquefied gas making about 50 gallons of "laughing gas." Such "N_2O," as it is known to the chemists, is usually free from all impurities.

Finally we come to chloroform which almost all of us have used for one purpose or another. This invaluable liquid was discovered by Liebig and others around 1831. As in the case of ether and nitrous oxide, its anesthetic properties were not known until afterwards, when Flourens announced, on March 8, 1847, that chloroform exerted upon the lower animals an effect like that of ether; but this announcement made little public or private impression. A few months later, Dr. James Simpson, a physician of Edinburgh, who had been searching for a less irritating and more convenient anesthetic than ether, consulted a certain Mr. Waldie who suggested that he use chloroform. Dr. Simpson soon satisfied himself by experiment of the value of chloroform as an anesthetic, and, on November 10, 1847, he read a paper upon the anesthetic properties of that preparation that caused its rapid and universal use. At first, it was believed that the employment of chloroform in surgery was attended by no danger to the patient; but presently the death of a woman, Hannah Greener, when under its influence, harshly disturbed that belief. Nevertheless, chloroform almost entirely superseded ether in England and upon the continent, although, as time passed by, the value of ether came more and more to be admitted by the physicians of the European countries.

It is well known that chloform is a limpid, mobile, colorless, and volatile liquid having a most characteristic odor and an agreeable and sweetish taste. It is prepared from bleaching powder, alcohol and water; the bleaching powder and water being mixed to form a thin cream, then alcohol added, the whole mixture placed in a large retort, and the chloroform condensed or distilled in the usual way. The distilled product of this bleaching powder and alcohol is a heavy liquid having a specific gravity of 1 5/10th. This anesthetic liquid does not readily mix with or dissolve in water; but, as would be supposed; readily mixes with both alcohol and ether.

Chloroform will dissolve a number of substances as camphor, amber, gutta-percha, wax, bromide, and so on. It is not naturally combustible; but may be made to burn with a greenish flame. In addition to being an anesthetic, chloroform is often used as a medicine, both internally and externally.

Such are three of the several great modern anesthetics—ether, nitrous oxide and chloroform. Each of these three anesthetics is administered by inhalation; but there is another class which contains just as true anesthetics, that is administered by injection more or less deeply into the body. Of this second class of anesthetics, cocaine is a familiar example; but there are other preparations that act upon the nerves very much as does cocaine. Cocaine itself, which chemists designate as "$C_{17}H_{21}NO_4$," is a fluid extract of the coca or cuca plant which resembles in appearance the better known blackthorn bush and grows to the height of 6 to 8 feet. To be more exact, cocaine is an alkaloid extract from the leaves of this plant (erythroxylon coca), which are of a bright green tint, thin and oval, tapering more or less at the ends. Christison was the first investigator to arouse interest in Europe in this coca plant. When its extract, cocaine, is externally applied to the skin, there is practically no effect; but when injected under the skin, so that it can act upon the mucous membrane, it produces a most satisfactory anesthetic effect, lasting usually for about 10 minutes. The action of cocaine is most familiar to us as a local or limited anesthetic, for minor operations upon the eye or nose; but of late this extract of the coca leaf has been often employed in major operations, and many surgeons have expressed great hopes in its future efficacy for such operations. Even as far back as 1885, Dr. J. L. Corning discovered that 1/6 of a gram of cocaine injected into the sub-arachnoid space of the spinal cord would produce complete anesthesia in that part of the body. Such anesthesia has, of course, the advantage of the patient being conscious without feeling at all the surgical operation. Modifications of pure cocaine can also be used; and it may be that in time the use of this second class of anesthetics will entirely supercede the use of the first class, excepting in operations upon or near the brain.

As has been said, there are other preparations that act very much as does cocaine. For example, there is eucaine, that might be called the lesser twin of cocaine. There are two grades of this eucaine manufactured, "eucaine a" and "eucaine b." It may be used for whatever cocaine is; but it does not act as quickly, it does not "last" as long, and it tends to cause local congestion and irritation. Moreover, there is a preparation called "holocaine;" and then, too, there are a number of other preparations that belong to this second class of anesthetics. These other preparations vary from ice to ether which merely numb the nerves by chilling them to injected fluids that temporarily paralyze the nerves. Of course all soothing liniments, as well as such a drug as laudanum applied externally, also belong to this second class. So, it is pretty evident that this latter class of anesthetics, taken in all, must be much larger in number and variety than the former class.

However, when we speak of an anesthetic, it is usually understood that we are referring to the first class. And this first class possesses indeed quite a variety of anesthetics. Ether, nitrous oxide, and chloroform have already been discussed; but there are, in addition, ethyl bromide, ethidene dichloride, amylene, and pental. The advantages and disadvantages of these other anesthetics of the first class have been abundantly discussed, and each of them has or has had its earnest advocates. The resulting opinion of surgical experimentation seems to be that ethyl bromide is best used in operations of rather short duration, and that ethidene dichloride, which was first employed by Dr. Snow in his cases, is on the whole pretty favorably recommended. But there are other anesthetic preparations of this class, as for example, methyl oxide, ethylene, amyl hydride, ethyl nitrate, and even turpentine and benzene. In fact, there are numerous other anesthetics; but they are mostly experimental ones, and neither safe nor satisfactory to use for a surgical

operation. A good many preparations will "put a person to sleep;" but the majority of reputable surgeons use either ether or chloroform.

But at this point it should be stated that many surgeons have obtained most satisfactory results from the combined use of two or more of the regular anesthetics. That is, they have used one of the anesthetics as a sort of "introduction" and then another of the anesthetics to "conclude" the operation. This has its advantages, for a nervous patient may thus be "nursed" into insensibility; and the use of one and then of another anesthetic may be better suited to some individual case. There are a number of these so-called "anesthetic sequences," such, for example, as nitrous oxide before ether; chloroform before ether; nitrous oxide, then ether, then chloroform; chloroform, then ether, then chloroform; nitrous oxide and ethidene dichloride; in fact, a large variety of such sequences. Moreover, there are real mixtures of these anesthetics. As, for example, chloroform with ether, or, one part chloroform and two parts ether. There is also the so-called "Vienna mixture," or, one part chloroform and three parts ether, which has been used extensively abroad. And there is the "A. C. E. mixture," consisting of one part alcohol, two parts chloroform and three parts ether, a mixture that has been recommended as preferable to chloroform.

Such is a somewhat brief description and account of the anesthetics, including both the first and the second class, used by the surgeons and physicians of this 20th century. What new discoveries of such alleviations of human suffering may be made in the future, are not yet known to us; but certainly the anesthetics of this present day are most welcome to the man or woman about to undergo the ordeal of some surgical operation. That any of the more powerful anesthetics is perfectly satisfactory and absolutely safe is not to be admitted, and the "perfect anesthetic" is yet to be discovered; but nitrous oxide, ether, chloroform and cocaine are indeed "friends in need" and certainly rank as merciful blessings in this world of so much pain and sickness.

GOODNIGHT OPERATION FOR THE CURE OF VARICOCELE.

By R. O. Braswell, M. D., Fort Worth, Texas.

The Goodnight operation is the simple shortening of the scrotum. It is very seldom necessary to open the tunica vaginalis, or to resect the enlarged veins, and our explanation is based upon the physiological action of the circulation.

Varicocele is relieved when the patient lies prone upon the back or wears a suspensory. The primary cause of varicocele, in our opinion, is the dragging down of the cord by the weight of the testicle. In all the cases of varicocele the scrotum is relaxed and the testicles swing low.

The technique of the operation is simple and is about as follows: Push the testicles high up in the scrotum and place a clamp across the scrotum just below the testicles in their high position. Cut away with sharp scissors or knife, all the scrotum below the clamp. Release the clamp and pick and ligate all bleeding points with catgut.

You will observe when the clamp is removed that the tunica vaginalis has not been opened. Close the wound with interrupted silkworm gut sutures. This will hold the testicles up permanently and take the weight off the cord, and does permanently relieve varicocele. If it is necessary in extreme cases, or where there is a hydrocele present, the tunica vaginalis can easily be opened through this incision, and it will not be found necessary to open higher up. This is a simple, but sure method of a permanent relief for varicocele.

CESAREAN SECTION.

By CHAS. F. DENNY, M. D., St. Paul, Minn.

In the last thirty years the views on this subject have undergone considerable change. From being a rather rare, it has become a more or less frequent operation. With improved operative methods in proper hands, it has been robbed of many of its dangers. Craniotomy is now rarely performed, and is undertaken only as a very last resort with great reluctance, and is a forced procedure only done to save the mother's life, and that exceptionally, and only under protest as it were, when the risk in Caesarean section is too great to assume, owing to the conditions of the case in hand. Certain more or less fixed rules for the performance of this operation (C. S.) have been formulated which have produced better results and placed the operation on a sounder and firmer basis than formerly. It is not a new procedure, but one that dates back to antiquity as its name implies. In the darker ages and preaseptic times, it was but rarely performed, and only seldom successful, and looked upon as a more than wonderful feat. All this at the present day has been changed, and the results are brilliant and life-saving both to mother and child. Large and small communities throughout this country and others testify to the truth of this assertion. In the year 1898, the writer made a careful review of cases occurring in the State of Minnesota and with one reported at that time by myself, there had been only twelve reported operations with five complete successes, both mother and child living, three partial successes, that is where one lived One case a Porro done by J. H. Dunn, M. D., of Minneapolis, for twin pregnancy must be classed by itself as the mother and one child lived and the other child died. That brought a total mortality where both died of three cases. These were all the reported cases up to that time in this State. These cases were done in St. Paul, Minneapolis and Rochester. The St. Paul operators, Wheaton, 3 operations, the first in 1880, Ohage 1, Hawkins 1, Pool 1, Dennv 1; Minneapolis, J. H. Dunn 2, Moore 1, Cutts 1; Rochester, W. J. Mayo 1. Since May, 1898, when the writer did his Caesarean, which was successful, there have been several others added to the list and successful as far as known. The last one being by Hammond in 1913, which was successful at the City and County Hospital, St. Paul. Now to return to our consideration of the operation. We are first brought to the subject of craniotomy vs. Caesarean section. This can be easily dismissed as at the present time the mortality under proper conditions is greatly in favor of Caesarean section. Craniotomy exposes the mother to great risks of infection, and moreover to those of, in my opinion, great shock in many instances. It should never be performed at the present day unless the condition of the patient is such that a Caesarean could not be safely performed as previously stated in the paper, i. e., it is a last resort, and its mortality will be high for mothers under these conditions. It is an operation that incurs a great moral responsibility, in that the direct sacrificing of one life is assumed. The occasions at which it will be necessary are at present extremely infrequent. The word "delay" stands out in Caesarean section as it is the turning point of success. Any patient who has been allowed to have hours of futile attempts at natural delivery or violent forcep extraction is in no condition to withstand an abdominal section, that would have been safe but for "delay." That brings us to the fact, early operation is an essential of success. It is the key note to the situation. It is the first rule of importance in every case under consideration where Caesarean section is justifiable. An exhausted patient will stand no severe strain. This is the real cause of high mortality. There is no more risk for infection in this than in any laparotomy, for other things. Indeed far less than in craniotomy as we have it more under control. Version and forceps in narrow pelves are a delusion and waster of precious time and strength. Symphysiotomy is the only real competitor

of Caesarean section. It is a very limited one, with a conjugate below 7 cm. or 2¾ in. it should not be tried. The separation of the pubes after section varies greatly with age and conditions of the patient, it is generally stated from 4 to 9 cm. (1½ to 3½ in.). This is truly a wide range and no one knows how much gain is to take place in any case before operating. It may or not be enough. If the spreading is 6 cm. (2 2/5 in.) the conjugata vera gains 1.2 cm. (½ in.), the transverse diameter 1.9 cm. (¾ in.), oblique 2.5 cm. (1 in.), by using some force in delivery these measurements can be increased from 6 to 7 cm. (2¾ in.). separation and a gain in the vera to 1.5 (3/5 in.). The above from the American Text-Book of Obstetrics. When we consider the possibilities of the great variation of average figures, the mutilation of the bony structure, the ligamentous strain entailed by this procedure, which may or may not produce lasting after effects (I say this in spite of statistics to the contrary) with these uncertainties before us, are we justified with the present ease and success of timely Caesarean operations in advocating such a measure as pubic section? In recent years pubiotomy has had many modifications as to the site of section, and has displaced symphysiotomy. The bony section being made with a Gigli's saw. True these are improvements, but why should we be called upon to mutilate normal supporting structures, when Caesarean section affords relief, and a record of low mortality at the present time? It would seem best that we proceed cautiously in this matter reserving pubic sections for cases where it (Caesarean) is positively refused by the family, and there is a reasonable hope that enough space will be gained for a viable child. This naturally brings up to the indications for Caesarean operation. In respect to pubic measurements these exist with conjugate diameters of from 2 1/3 to 3 1/3 in. or 6 to 8 cms. according to text-books. Practically speaking these are divided into absolute and relative indications. If you have a patient with a contracted pelvis with a well developed fetus, and a conjugate of 2½ in. I would consider it an absolute indication for section. There would be no question below this figure. Above that figure up to three inches or a little over, the indications would be relative. Being determined by the general shape of the pelvis, the size of the fetus, the chances for its viability by the natural route. There would be found many cases of relative indication that are far better for section than to be subjected to the strain of forcible delivery, and the chances for both mother and child in the light of our present knowledge greatly enhanced by it. All these things must be adapted to the individual case in hand, bearing in mind, we must have the viability of both mother and child under consideration. We know that in narrowed pelves the use of high forceps is attended by great difficulty of application, again impossible, and where they are used great damage to the soft parts ensues, bad cervical lacerations, and a dead child more than likely to occur. Personally, high forceps (I mean by that any case where the forceps are applied before the head has passed the os, i. e., through a partially dilated cervix), is to be condemned and should be banished from obstetrics as version is far preferable, and even that is far from satisfactory, and often a craniotomy to the after coming head will be necessitated in these narrowed pelves.

Again, when you consider the after effects of both symphysiotmy and pubiotomy with its risk of permanent invalidism as to locomotion and moreover the risk of infection involved, the injury to the soft parts as the bladder and urethra in its performance, venous thrombosis and its positive unfitness for any septic condition, in the light of these facts one cannot but hesitate in recommending such a procedure only in very exceptional instances. During the last five or six years central placenta praevia has been named as an indication for Coeliohysterotomy and certainly deserves its place.

Vaginal Caesarean section has all the dangers of high forceps together with increased risks of infection, and should not be undertaken lightly. Eclampsia and occlusion of umbilical chord may be cited as sometimes an indication for section. In regard to post-mortem sections there can be no question as to their desirability, but that the opportunities for their successful performance will be few and far between. The operation of Coelio-hysterotomy or Coeliohysterectomy should not be undertaken

without careful consideration by any operator, and never by anyone who has not experience enough in surgery and confidence enough in himself to complete the work. Experience in abdominal operating is invaluable in these cases. The decision as to a hysterectomy under these conditions must be based on the judgment of the operator as to the necessities of preventing further pregnancy and as to the ability of the patient to withstand the additional time of execution. It is probably better where such conditions exist to resect the uterine end of the tube, removing a "V"-shaped piece of the cornua with an inch of the fallopian tubes which will prove as satisfactory and be much quicker performed. By this means the ovaries are still intact and much after inconvenience to the patient avoided. Tumors cystic or other kinds obstructing the parts below the ileo-pectineal line so as to prevent the passage of the child are an absolute indication for Caesarean at full term.

The various text-books on surgery and obstetrics so fully detail the steps of this operation that I shall not take this up in detail but call attention to an operative suggestion, viz., the caution of overhaste in operating. It should be deliberately executed and rapidly at the time of the uterine incision and delivery of the child, at all other times no great haste is needed unless the condition of the patient necessitates. This is not usually so if precautions are taken to counteract the two periods of shock. The first at the time the uterus is lifted from the abdominal cavity, and the second at the time the uterine incision is made and the hemorrhage occurs. Some prefer to avoid the first by not lifting the uterus up, but the protection afforded the abdominal cavity by so doing more than compensates for the momentary shock at this point, and besides it may not occur. The second period of shock the uterine incision is the severest, and I know of no better safeguard against this collapse or the first, than the administration of a hypodermic of morphia and atropine, a half hour before the anesthesia, and another of strychnia and digitalin as the patient goes under the anesthetic. After the patient is fully asleep and the external incision is started a hypo-dermoclysis should be commenced in the breasts and a full quart allowed to pass in, this compensates for the loss of blood which suddenly takes place on the uterine incision, and tides the patient over the sudden shock which occurs at this time. After the delivery of the child and good contraction of the uterus obtained, there is no more need of haste in a well-rallied patient than in any other operation, and a careful and painstaking repair of both uterine wound and abdominal wall made, which if the operator works steadily will not take so very long and will be rewarded by an uneventful convalescence and a firm wall. In these cases a modification of the older method of wall repair will be found quicker and very satisfactory. It is as follows:

Six or eight silk-worm gut or braided silk sutures are threaded on curved needles one at each end of the suture. These are prepared and sterilized before operation. They are passed from within, about half an inch inside the peritoneal margin, upward through the muscular wall and skin on either side, until the necessary number of sutures have been placed to hold the muscular wall in position. These are not tied until the peritoneum is closed by a continuous catgut suture when they are tied bringing the wall well together, the margin of the skin may be united by interplaced catgut skin sutures or zinc oxid plaster strips used. This is quick and effective if properly placed. One other operative suggestion. It is folly to deluge a patient with soap and water and scrub her with any kind of brush or sponge. It is a waste of time and an invitation of stitch abscesses in that it irritates the skin, produces abrasions which invite the work of the albus to begin. This holds good of all operative preparation. To obviate this, to save time, nothing can compare with first gently going over the whole belly wall with a gauze wet with benzine. Follow this with alcohol or as I prefer a mixture of

Formalin	5.00
Turpentine	125.00
Alcohol ad	500.00

being careful to allow no excess to run over the back and under surfaces of the body, which is easily done by not super-saturating the gauze. Do this gently not violently.

Wipe out the umbilicus, and touch it with a few drops of tr. iodine, if you do not like this, merely use the alcohol, and then mark the line of incision with iodine. A long experience with this method has proved it safe and sound.

All obstetricians should measure the pelves of patients that come to them for care, keeping a record of the same, and by so doing they will be fore-warned of troubles that can be met intelligently and a case that might need Caesarean section be brought to notice early and in ample time to make a decision as to what should be done. One vaginal examination should always be made at this time.

In closing, I wish to state that properly selected cases, those not exhausted by futile attempts at labor, operated on at the commencement of true labor when the os is dilating will recover from Caesarean section in careful hands, both mother and child living, and the mother will make a convalescence which is marked by an ease and rapidity that is not seen in normal labor.

611 Lowry Bldg.

H. B. Graham, San Francisco, reports an interesting case of fistula of the labyrinth due to Friedlander's bacillus treated by operation in the *Therapeutic Gazette*. He states the patient came to the clinic with history of slight discharge from the ear for seven years. The fact that there had been a slight discharge from the ear was significant, as the drum membrane was intact. Many general practitioners would have said there was nothing the matter with the ear, that the discharge was undoubtedly wax. He came, however, not because he had a suppurating ear, but because when he pressed on the tragus he fell down. At times he was very dizzy and even nauseated when he did this, from which we deduced that there was a labyrinthine fistula. There was no perforation of the drum membrane, and the long process of the hammer was present. There was a small white spot, above the drum membrane in the lateral attic wall, through which I found that a probe simply fell into the middle ear. I think a seven-year discharge from the ear without perforation of the drum membrane is unknown. I considered it to be due to local tuberculosis or a cholesteatoma, and decided to do a radical operation. I operated and found no cholesteatoma. The head of the hammer and the malleus were gone and the promontory of the horizontal canal was replaced with granulation tissue, pressure on which produced the characteristic motion of the eyes. There was no history of tuberculosis, no tubercle bacilli in the granulations of the middle ear nor in the secretions, and no reaction to tuberculin could be induced. A guinea-pig inoculated with the material from the middle ear gave a negative result. There was a Gram-negative bacillus present, which is very unusual in the ear; this had all the characteristics of the Friedlander bacillus except that it did not liquefy gelatin. The patient was operated upon twice, and between the first and the second operation he lost his fistulous symptoms, and I judged that the horizontal canal was entirely destroyed. I found at the second operation that I could scrape off the granulations from the horizontal canal, and pressure here produced reaction in the eyes. When the ear had healed I found that a portion of the vestibular apparatus was intact, and he now hears a whisper across the room. I never knew of a case of labyrinth exposed as this was exhibiting almost perfect hearing.

MILK OF RUTTING COWS HARMFUL FOR INFANTS.—The milk of cows in heat undergoes a considerable chemical change, according to H. Steng (*Arch. f. Hyg.*), and very likely contains ovariotoxins; it gives rise to diarrhea and derangement of the intestinal tract when fed to infants, and hence, must not be given to little children.—*Ex.*

Do not forget that the case of "sore throat" may turn out to be one of diphtheria. Be ready with antitoxin.

SUMMARY OF THE PAPER READ AT THE NATIONAL CONFERENCE ON RACE BETTERMENT HELD AT BATTLE CREEK, MICH., JANUARY 8-12, 1914, UNDER THE TITLE: SOME SUGGESTIONS FOR A MORE RATIONAL SOLUTION OF THE TUBERCULOSIS PROBLEM IN THE UNITED STATES.

By S. ADOLPHUS KNOPF, M. D., Professor of Medicine, Department of Phthisiotherapy at the New York Post-Graduate Medical School and Hospital, New York.

In summarizing, let me repeat then that in spite of all our efforts we are still losing about 200,000 people annually from tuberculosis in the United States. Of these, I venture to say, 50,000 are tuberculous children. Estimating the average duration of life of the 50,000 children who die annually from tuberculosis in the United States at about seven and one-half years, and figuring the cost to parents and the community for each life as only $200 per annum, the financial loss thus represented is $75,000,000. These children have died before they have been able to give any return to their parents and the community. What a useless sacrifice of life and of money! How much needless sorrow and heartaches caused to parents!

Besides all this, many a tuberculous mother has had her life shortened because she bore one of these children. According to the report of the commissioner of education, there are at this time about 20,000,000 children attending public schools in the United States. Placing the proportion of tuberculosis among them as low as only three per cent., would make 600,000 children afflicted with tuberculosis who are at this time in urgent need of open air instruction or sanatorium treatment. According to available statistics we can at present provide instruction in open air classes for about 2000 tuberculous children. The anemic, the nervous, and the children suffering from cardiac diseases, who are in equally great need of outdoor instruction, are not included in the three per cent.

The 150,000 adults who die annually of tuberculosis have at the average been ill and incapacitated for work for at least two years, and figuring their cost to the commonwealth (either to municipality or individual family) at only $1,000 per year, would mean $300,000,000 uselessly spent in caring for people afflicted with a disease that might have been prevented or cured. Of these 150,000 adults, a large number have been married and in many instances leave either widows or orphans depending upon public support. The annual maintenance of these widows and orphans must, of course, also run into the millions. We have thus an annual expenditure of wellnigh $400,000,000. Yet this by no means represents all the actual loss to the community from tuberculosis. Our social economists tell us that between the ages of 16 to 45 every adult life with an average earning capacity represents an asset of $5,000 to the community. Now, as two-thirds of all deaths from tuberculosis in adults occur between these ages we have an additional loss of $5,000,000 to the community. Thus, the actual direct and indirect loss caused by death from tuberculosis in the United States amounts annually to something like $900,000,000, and this amount we spend on a preventable and curable disease!

We must also bear in mind the fact that we have at least eight times 150,000 tuberculous adults, for it is well known that for every individual who dies of tuberculosis there are eight living with the disease, spreading infection. Besides these, there are about 400,000 tuberculous children. By reason of lack of open air schools, preventoria, sanatoria, special hospitals, and horticultural, agricultural and industrial colonies, the vast majority of these 1,200,000 tuberculous individuals continue the chain of infection and keep up our fearful morbidity and mortality at an expense of $900,000,000 per annum.

Surely, the time has come for dealing

more rationally with at least some phases of the tuberculosis problem in this country. And what are we to do first? We must at once, throughout this vast country, strive to have no uncared-for tuberculous patients. To this end, institutions for treatment and care of the tuberculous who cannot be cared for at home without endangering others, should be multiplied by State and municipal appropriations and private philanthropy.

We must not be content with merely sending the tuberculous individual to a sanatorium for 6 or even 12 months until his disease is arrested or his condition improved and then allow him to return to his former deplorable unhygienic home environments or to resume his former occupation under the equally deplorable unsahitary conditions, which were probably responsible for his contracting the disease originally. Agricultural, horticultural, and industrial colonies, where the sanatorium graduate may have an opportunity to go for a year or more to earn a fair wage and at the same time be given a chance to make himself stronger and more resistant against a new outbreak or invasion of the disease are as essential as sanatoria or special hospitals. Without making the arrest or the cure of the disease lasting by such judicious after care, the millions or dollars spent for sanatorium maintenance are a sheer waste of money.

Even the smallest children if found tuberculous should receive institutional treatment when the parents are poor, and whenever possible, the mother should be allowed to remain with the child. For larger children afflicted with pulmonary tuberculosis we should have inland sanatoria with schools attached to them. For children afflicted with glandular, joint and bone tuberculosis, we should have seaside sanatoria and some of our discarded battleships or cruisers may be utilized for this purpose instead of being sold as junk or made to serve as targets.

Open air schools and as much open air instruction as possible in kindergarten, school and college should be the rule; indoor instruction should be the exception. There should be no home lessons for the younger children. Love for life in the open air should be inculcated in the young and old throughout the country.

There should be a sufficient number of public parks and playgrounds in our great cities to counteract congestion and reduce it to a minimum. The roofs of all city houses should be utilized to give more open air life to the inhabitants by making them into roof gardens, recreation centers, or playgrounds. Outdoor sleeping should be encouraged whenever feasible.

Medical under- and post-graduate schools should give special courses in early diagnosis of tuberculosis, and instruction in how to inaugurate efficient social service for hospital cases afflicted with tuberculosis.

Early recognition of the disease should be facilitated for all classes by universal semi-annual examinations by private physicians for the well-to-do and by publicly appointed diagnosticians for the poor. The federal and municipal authorities and the employers of large bodies of men and women should set the example by enforcing these semi-annual examinations and should further what is commonly known as welfare work.

Besides popular anti-tuberculosis and general hygienic education, demonstrations by permanent exhibits, distribution of literature, lectures in schools, colleges, workshops, mills, factories, mines, stores and offices, the examination of every tuberculous adult should be accompanied by personal instruction in how to prevent infecting others. Anti-spitting ordinances should be inforced, but receptables in public places for those who must spit should also be provided.

There should be state insurance against tuberculosis so that the man without means may be assured that even if he is found to be tuberculous he or his family will not be in want. Until, as in Germany, state insurance companies have their own sanatoria, our private insurance companies should be permitted to establish and maintain sanatoria and special hospitals for their tuberculous employees and policyholders.

Other sources of tuberculous infection, as for example from cattle or hogs, should

be dealt with by federal laws since state laws by reason of their diversity and often inadequacy have proven inefficient. All milk, if not coming from tuberculin-tested cattle, should be thoroughly and scientificially and not merely commercially sterilized.

The influx of tuberculous immigrants likely to become a burden to the community should be prevented by compelling all steamship companies to assure a clean bill of health for every immigrant they bring to these shores and to insure every immigrant against tuberculosis. The policy should entitle the bearer to return transportation and free treatment in a sanatorium in the event of his contracting tuberculosis within a specified time. The cost of the insurance could be added to the price of the steamship ticket.

Procreation of the tuberculous should be prohibited by law and the prevention of it taught to every tuberculous adult. The individual wilfully violating this law should be punished in a way to make the repetition of the offense impossible.

The predisposing factors, such as child labor, sweatshop labor, too long working hours for men and women, bad housing conditions in tenements, apartments, lodging houses and hotels in city and country, including farm houses, boarding houses, orphan asylums, and other institutions housing many people, must be combated by rational laws and their strictest enforcement. The same rigor should be applied to laws concerning proper ventilation and sanitation in workshops, factories, stores, federal, municipal and private offices, and in public conveyances.

Wherever and whenever practical, the home of the married American workman should be a detached single family house.

Maternity and convalescent homes should be provided in every city and town so that the laboring woman arising from child birth or the laboring man or woman recovering from a surgical or a general medical disease can recuperate, regain strength, and thus not be susceptible to tuberculosis on returning to the daily vocations.

Tuberculosis among the Indians and negroes, Chinese and Japanese must receive special attention on the part of our federal government with the view to combating the morbidity and mortality from tuberculosis in these races (particularly in the negroes and Indians) in this country which is three times higher than that from tuberculosis in the white race. Nearly all our reformatories, prisons, and other penal institutions, including detention prisons, must be reconstructed or remodeled, cells and workrooms made sanitary and more outdoor life and better food given to the prisoners if a few years of penal servitude is not to be equivalent to a death sentence by tuberculosis. No tuberculous prisoner should be discharged unless he is sent to a sanatorium so that when free be may also be well.

Malnutrition and the underfeeding of the masses, which is so great a predisposing factor to tuberculosis, should be combated by beginning with having fewer artificial and more breast-fed babies; by instructing ignorant mothers how to feed infants and little children; by providing simple but substantial school luncheons for all school children at cost; by education of the mothers in economic house keeping, cooking and food values; and by having eating places for the great army of unmarried laborers after the example of the German "Volksküchen" where people can receive good, wholesome food at reasonable prices; by legislative and philanthropic endeavors to make farming more profitable and more attractive, and by a wiser statesmanship whereby the cost of living may be reduced for the entire people.

Alcoholism and other excesses predisposing to tuberculosis should be prevented by education along rational temperance lines and wise and judicious legislation.

The eradication of tuberculosis as a disease of the masses with all the physical, mental, and moral suffering, and the millions in money now sacrificed largely in vain, is nevertheless possible, but I emphasize once more, not until every tuberculous individual, in no matter what stage of the disease, is properly cared for at home or in an institution and all the predisposing causes removed. All the meas-

ures to attain this end must of course be inspired, not by a blind phthisiophobia (an exaggerated fear of tuberculosis) nor by an hysterical phthisiophobia (allowing the tuberculous person to do as he pleases because of our sympathy or love for him). The intelligent cooperation of the tuberculous patient is as much needed in the solution of these various problems as that of the statesman, physician, philanthropist, and the people at large.

The various measures which I have ventured to suggest and which are described in detail in my paper, must not ever be allowed to become a crusade against the tuberculous individual, who is our friend and brother, but for his sake and our sakes we must make henceforth a more rational and determined fight against the disease "tuberculosis," which is our most costly enemy and the most deathly foe of mankind.

Of course, there are certain social reasons for the prevalence of tuberculosis which are also responsible for some of our other social and physical ills. Among them I must mention first the utter ignorance of the vast majority of people who enter into matrimony of the responsibilities they assume as fathers and mothers of the coming generation. Some great philanthropist or some wise government should take the initiative and establish schools where the responsibilities and obligations of father and motherhood would be taught. To these schools all candidates for marriage should be admitted gratuitously. A course of one or two months would suffice and there should be night lessons as well as day instructions so that those occupied during the day may also have an opportunity to learn. These courses should include family hygiene, home hygiene, eugenics, the science of raising children physically, mentally, and morally healthy, and such individual instructions for man and woman as the case may demand, all the work being directed towards enabling the future family to live a normal and happy life.

Next, I must refer to many of the abnormal industrial conditions of our day and the social injustice arising therefrom —our strikes, the lack of employment in some districts and the lack of workers in others, etc. These conditions must be readjusted, our deserted farms must be repopulated from the congested cities, the lives of the masses must be made happier. When all this is realized, it will not only help in the solution of the tuberculosis problem, but will be a mighty factor in bringing about what this conference has been called to consider—a genuine race betterment. But let us not think that this will come about unless we all believe in and work for a larger love of humanity and for more social justice and personal service to our less fortunate brothers and sisters. Some one has said that service to man is the highest service to God. I believe in this with all my heart.

WASSERMANN-FAST TABES.— D. M. Kaplan, New York (*Journal A. M. A.*), describes a type of tabes in which, in spite of treatment, the Wassermann test remains positive and reports the results of observation of two cases which represent the Wassermann-fast variety of the disease. It is sometimes possible to obtain a weak result after very vigorous treatment and very rarely even a complete negative Wassermann, but this does not last and the serologic action is positive again in a week or two. These are the cases which later develop taboparesis. Whether salvarsan or any other undiscovered remedy will ward this off, time will tell but Kaplan does not seem to believe it. He thinks, however, they should be given the benefit of the treatment as repeated doses of neosalvarsan have produced encouraging changes in the psychic manifestations of the disease. He says, "as the serology of a tabetic inclines toward assuming the Wassermann-fast tendency, it is my opinion that the clinician should be on the lookout for clinical evidence of an approaching taboparesis."

STATUS THYMO LYMPHATICUS.

By D. C. BOSSERMAN, St. Louis.

History.—It has been known for nearly a century that an enlarged thymus could cause disturbances of respiration, when Kopp in 1829 made his publications. His view that enlarged thymus could cause true tracheostenosis is today held by the majority of observers. Thirty years after Kopp's paper, Friedleben denied the possibility of mechanical compression of the trachea by an enlarged thymus, and his views were accepted until the close of the nineteenth century, when Paltauf called attention anew to questions of thymus pathology. He found in his cases of sudden death without apparent cause, not only an enlarged thymus, but also a hyperplasia of the entire lymphoid apparatus. This latter condition we define as the *thymo lymphatic state.*

Anatomy of the Thymus.—This is an irregular shaped gland situated in the anterior mediastinum, held by loose connective tissue, found mainly during child life, after puberty receding, and remaining of small size through life. At birth its weight is about one-half ounce. It is composed of two lobes of unequal size, often with accessory lobes. Its capsule is attached to the sternum, pericardium and the great vessels. Small veins connect it to the thyroid gland. It extends from the upper border of the sternum to the fifth rib, and protrudes laterally slightly beyond the borders of the sternum. Posteriorly it rests against the right auricle and often touches the left ventricle. It envelopes the large veins and arteries extending upward to the arch of the aorta, and downward to the bifurcation of the trachea, and may pass between the bronchi and touch the esophegus. The right vagus is behind the gland, the left vagus only touches it. It has ample arterial supply, but has rather less venous outflow. It has few fine nerves.

Minute Anatomy.—The gland is carried by a connective tissue recticulum. It is made up of primary lobules from the size of a pin's head up to as large as a pea. Each lobule shows a cortex and medulla. The parenchyma of the gland is epithelial in character. The connective tissue is composed of two kinds of fibers, having different embryologic origin, and different staining properties, the one kind entwining between the other, similar to the glia in nervous tissue. In the cortex are many small cells, which are now accepted to be true lymphocytes, though they were first thought to be epithelial in character. They show ameboid movement and are very sensitive to X-rays. Large leucocytes, among them being eosinophiles, are found in the cortex, in the medulla, in the vessels, and in the interfollicular tissue. In infectious diseases of children, the eosinophiles disappear. At puberty the eosinophiles disappear entirely in normal individuals. Those who show lymphatism have persisting eosinophiles.

In the medulla are found the Hassal bodies, which are characteristic of the thymus. They are concentrically arranged corpuscles, appearing to be formed by a degenerative keratization of collections of the parenchymatous epitheloid cells.

On cutting into the thymus, there exudes a whitish liquid not unlike pus, which is found to be a fluid filled with living lymphocytes.

Physiology.—The thymus sustains a relationship to the sexual organs. It persists longer after castration. In bulls and unspayed heifers, normal atrophy of the thymus, which begins after the period of puberty, is greatly accelerated when the bulls breed or the heifers become pregnant.

In 1777 Hewson found small nuclei in the gland which he said traveled to the spleen and became the blood cells.

In 1832, Sir Astley Cooper stated that the thymus prepares a fluid from the mother's blood for the fetal growth and nourishment before birth.

Friedleben, in experimenting on dogs, found that no dog died of thymus removal, nor did they die from removal of the

spleen, but when both glands were removed the dogs died; which was attributed to lack of blood formation.

D. Noel Paton, in studying the blood in thymectocized guinea-pigs, found no effect on the erythrocytes, but a leucopenia lasting three months. He found the resistance to staphylococcus and streptococcus toxins diminished, there not being the usual leucocytosis on injection of these bacteria. However, if the pigs became pregnant, they showed the normal leucocytosis.

Basch, when he had removed the thymus of dogs three weeks old, found: first, the bones remained cartilaginous and pliable longer; second, greater excretion of calcium from the kidneys; third, greater irritability of the peripheral nerves, convulsions being easily brought on.

Klose, on performing thymectomy on younger dogs, when the thymus was at its greatest growth and function, reviews the results of the thymectomy thus: First, latent period. Second, adiposity, during a period of two to three months with steady increase in weight, increase of pasty spongy fat (which he called "exudative diathesis"), with the appetite abnormal. Third, cachexia thymopriva, three to six months, in which the animals lost in weight, the bones became weak, fractures were spontaneous, and the dogs became idiotic, eating anything. Fourth, coma thymicum. The bone changes in these animals simulated those of rachitis, osteomalacia and osteoporosis. The calcium was reduced from 65 to 32 per cent., and Klose theorizes that this is brought about by an "oxapathy" or intoxication with an acid (probably nucleinic acid) which the thymus hinders from forming or masks or neutralizes. The brain of the animal was found swollen and edematous, and the spleen in a compensatory condition, with cell division and follicle formation active.

Basch concluded that both osseous and nervous changes were simply the result of alteration of metabolism.

Paton concludes that the thymus produces an internal secretion which exercises marked influence upon development and growth, but that its removal may in part be compensated by the internal secretion of the testes in the male. Also that the secretion of the thymus acts upon the central nervous system, increasing the stability of the reflex arcs.

The thymus is related in some way to the thyroid gland, but it has been difficult to specialize in that way. There is always extreme hazard in operation for Graves' disease when the subject is suffering from thymo-lymphatism.

The nerve irritation and the osseous maldevelopment are not peculiar alone to thymus removal. The difference of symptoms from that of removal of other organs, is, their transciency, and the extraordinary relation the thymus sustains to the lymphoid apparatus of the body.

Pathology.—A larger thymus than usual is found, or a persistent thymus at a time of life when normally the thymus has atrophied. Also general enlargement of lymph-node groups in various parts of the body, hypertrophy of the tonsils, the follicles at the base of the tongue, the intestinal lymph follicles, and enlargement of the spleen and its follicles. Hypoplasia of the circulatory apparatus, narrowing and thinning of the walls of the aorta and other vessels, with at times a degeneration of the heart muscle is found. Also, pallor of skin, well developed adiposity, long arms and legs, hetero-sexual hair, hypertrophy of brain, enlarged thyroid, hypoplasia of adrenals, and the whole chromophilic system. All cases of Addison's disease which are not due to tuberculosis are due to the lymphatic state. In fact, the state of the adrenals seem to be a contributing cause of death. The Hassal bodies are increased in number. There is an increased tone of the vagus nerve. People thus afflicted are peculiarly vulnerable. Thirty-six per cent. of a definite number of cases of suicides were found to be suffering from this peculiar state. The large thymus seems to be but one finding of the general condition. The pressure mechanically may be the direct cause of suffocation, but it has been demonstrated that there also existed a capillary bronchitis and intestinal condition in these cases, which probably caused the death. Rehn in 1896 demonstrated prompt relief from

suffocation by thymectomy; but adult sudden death from psychic irritation or chloroform anesthesia cannot be traceable to mechanical obstruction alone, but shows effects of a general constitutional disturbance.

Symptomatology.—I have above brought out the symptoms of the general condition with the pathology. In children, with special enlarged thymus, there are subjective symptoms of tracheal obstruction, respiratory stridor, sudden attacks of asphyxia brought on by any shock, in which the child may die. There is difficulty of swallowing and symptoms of compression of the large vessels of the neck. On inspection there is bulging of the jugular fossa on expiration. Percussing, there is dullness of a triangular area, with the base upwards at the sterno-clavicular junction. and the apex at the sternal junction of the second rib. The patients have a pale pasty habitus. In older patients the blood picture of chlorosis is constant.

Diagnosis.—There may be simple hyperplasia of the thymus without the signs of concomitant status lymphaticus. Enlarged thymus may not produce any symptoms whatever; the large number of sudden deaths in apparently healthy children suggest this. Hyperplasia of the thymus is often found associated with Graves' disease; Matti having found at post-mortem, out of 133 cases of hyperthyroidism, 98 cases or 74 per cent. of thymus hyperplasia. The condition is frequently associated with rachitis. It is sometimes confused with scrofulosis. Search should be made for the nasopharyngeal lymphoid ring, particularly for enlargement of the follicles at the base of the tongue, which is characteristic. The cervical, bronchial, epitrochlear, axillary and inguinal glands are the ones usually involved. However, the X-ray decides the diagnosis of the large thymus itself.

Treatment. — Anything that obstructs the circulation about the neck and pharynx should be seen to. Remove adenoids and all vegetation using *no anesthesia.* It may be necessary to feed by gavage. Stimulate nutrition by giving arsenic.

Partial thymectomy is indicated when diagnosis of large thymus with pressure symptoms can be established. Klose reviews operation on twenty-three children by different surgeons, in which nineteen entirely recovered, three died and one was improved. Consideration must be had in operating on too young subjects or removal of too much of the gland, in not interfering with the physiological function of the gland.

X-ray, Klose considers dangerous treatment. But with the late progress in the use of this machine, Friedlander predicts successful therapy with its use, and cites a cure in 1904 by twelve Roentgen exposures.

The alteratives are indicated in the general condition.

Summary. — The thymus is one place where lymphocytes are formed, at least during the active stage of the gland; thereby proving its relation to the lymphoid apparatus. The condition may be a pathological entity through life, not alone in childhood. Thymolymphatism affects children most dangerously, because of the mechanical effects of the enlarged thymus exacerbation. In adults, the condition can be considered little less than a defection or deformity, which leads to polyglandular insufficiency and a disturbance of equilibrium of all the endocrinous (or internal secreting) glands.

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*I am indebted to Dr. Geo. Richter, for suggestions in preparing this paper.

QUICK EMESIS.—When it is necessary to quickly empty the stomach direct the patient to drink as much warm water, made slightly alkaline by soda, as they can swallow and then inject one-tenth grain of apomorphia. The results will be quick and very satisfactory.—*Ex.*

If you have a troublesome case of keratitis have a Wassermann reaction made—it is probably due to syphilis.

THE DOCTOR AND BUSINESS.

By D. L. FIELD, M. D., Jeffersonville, Indiana.

As a rule, doctors are poor financiers. They may accumulate thousands of dollars of uncollected accounts, and the reason they do not get the money is because they are afraid to ask for, or demand settlement, for fear of losing business! They cannot see that they are losing business if they do not collect their accounts.

There is no more reason for a doctor doing a long credit business any more than professional men in other lines. The lawyer gets his retainer, and the minister his monthly salary in hand; but the doctor must wait for *his* money until his patrons voluntarily pay! There ought to be a system of regular monthly statements. Such statements uniformly rendered; some as a hint, at least. I have known doctors who had a large practice but died comparatively poor because they were poor business men.

The first great duty of the physician is to answer the "Cry of Humanity," but it is *also* his duty to send in his bill. Surgeons as a rule get royal fees, but physicians doing a general practice are left in the lurch.

It is a good practice to call personally and politely solicit your pay for services! It is too often the physician's fault that he gives up the best years of his life to the non-paying and dead-beat class. It is certain that the doctor who does not get his due will be humiliated by owing the butcher, the grocer and the coal man. I collect my bills myself, and can do so better than any paid collector. Never send a collector if you can help it, as nine times out of ten he will possess so little tact and natural politeness that he is sure to offend. You can better afford to render your accounts either in person or by post. Another thing very necessary, is for a physician, like any other business man, to learn to sift the "chaff from the wheat." Cut out the dead-beats and all who are indifferent about paying. You will not lose thereby, but will gain. The writer's father practiced medicine and surgery from 1825 to 1888, and the surgery got him more good money than did the general practice. He did thousands and thousands of dollars worth of work without fee or reward, but still he did not die a *pauper*. He was a poor collector, too.

If a practitioner has not acquired a competency by the time he reaches three score years he never will. There will be too little sunshine to enable him to make much hay. When he reaches the "sear and yellow leaf," his ambition ceases; his enterprises do not pan out, and his natural disposition becomes one of repose rather than action. Therefore, let the younger members of the profession take warning and see to it that they neglect not the *business* side of medical practice. I have knowledge of one doctor who kept no "books," but depended on his memory. He died poor! On the other hand I know a physician who kept in his pocket memoranda of all accounts owing him, and carried a receipt book also. If any one should ask him how much he owed him, he was primed for the occasion. No doubt he collected large sums by "calling a bluff!" Another doctor kept such jumbling books that it was impossible for him to accurately inform a debtor as to the amount of his bill. Still another very successful doctor kept books but would positively decline to render an itemized bill. If he attended a patient a long or a short time, he would coolly inform the same that his account would be $100.00, or more, or less. He went upon the principle that it was worth far more for a rich man to get well than it was for a man in moderate circumstances. He only rendered lumping accounts for services. And he got the business.

It is somewhat humiliating to string out a long itemized bill. Just say for professional service, so much. Do as the lawyers do. Who ever heard of one of then rendering an itemized bill, unless the court required one in a suit. Of course, a doctor would have to do likewise. Be careful to make your account one that can be defended in court. If you are suspected of being extortionate,

you may come to grief. I know a physician who rendered an exorbitant bill against an estate, and the judge cut it down about *one-half,* and administered a rebuke, also. You can imagine how mortified that doctor was. Be fair and honest, but maintain a fair remuneration for your work, and see that you *get* it!

ABSTRACTS

THYROID-TISSUE TUMORS OF THE OVARY. —Dr. Geo. U. Outerbridge in an interesting article appearing in the *American Journal of Obstetrics* says, the occasional occurrence in ovarian neoplasms of tissue presenting both grossly and microscopically an appearance practically identical with that of the thyroid gland has been noted by numerous observers, and quite a series of such cases have been recorded in the literature. In the majority of these specimens the thyroid-like tissue formed but one constituent of a more or less complex tumor of teratomatous nature, but in a few instances good sized ovarian growths have been encountered consisting entirely, or almost entirely, of this. These tumors present certain points of interest from the clinical as well as from the pathological standpoint.

In the effort to establish some point of identity, other than histologic similarity, between the thyroid-like tissue of ovarian tumors and that of the thyroid itself, a number of investigators have tested the ovarian-thyroid tissue for iodine, with, in a few instances, positive results. The only author to give definite quantitative figures, however, is Robert Meyer, who, although he was able to demonstrate chemically the presence of iodine, found it in such infinitesimal quantities (0.000225 gm. iodine in 16+ gm. of ash, equivalent to about 1 part of iodine in 72,000 parts of ash) that he himself admits its presence to be of comparatively little significance, notwithstanding which his findings have been quoted by several subsequent writers as proof-positive of the identity of the two tissues.

In conclusion he adds with regard to the nomenclature of these tumors. Various terms, some rather cumbersome, have been applied to them by different authors, e. g., "teratoma strumosum thyroidiale ovarii," "struma thyreoidea ovarii," "Struma thyreoidea aberrata ovarii," "Struma ovarii colloides," and "Struma ovarii." The last-mentioned title appears to be the most popular; it has at least the merit of brevity, but is open to the objection that it expresses neither the genesis nor the anatomic characteristics of the tumor. The first-mentioned term, shortened to "teratoma thyroidiale ovarii," would appear on the other hand to express in a moderately compact form the genesis, the chief anatomic characteristic, and the seat of the growth; the addition of the qualifying adjective "strumosum" seems a rather unnecessary complication. A point well taken by Dingels is that any such specific term should be limited in its application to those tumors in which the thyroid tissue forms grossly the very decidedly dominant portion, rather than applied to any and every case of dermoid cyst or solid teratoma which happens to contain a small area of this; there seems to be no good reason for singling out in these latter the thyroid portion for special emphasis, and were we to attempt to formulate a comprehensive anatomic title for such neoplasms, we should have to invent names rivalling in length and complexity those of some of the organic chemical compounds.

CONCLUSIONS.

1. In certain ovarian tumors there occur areas of tissue which cannot be distinguished histologically from that of the thyroid gland.
2. Between tumors which show a complex teratomatous structure, containing among numerous other elements a small amount of thyroid tissue, and those composed solely of this, there is no sharp dividing line.
3. All these tumors are of similar genesis; they are *teratomata* with varying degrees of suppression of the ectodermic and mesodermic elements.
4. The large majority of these tumors

are clinically benign; the few which are malignant show, in most instances, areas of unmistakable irregularity in their cellular structure, or give other histologic evidence of having assumed a destructive type of growth.

5. The thyroid tissue in the ovary is of no functional significance, at least in the vast majority of cases, and these growths give rise to no symptoms other than those which would be produced by any type of ovarian tumor of equal size.

6. The term "teratoma thyroidiale ovarii" is suggested as the most satisfactory designation for those tumors in which the thyroid tissue forms the dominant feature.

ALBUMIN SPUTUM.—M. L. Holm and L. R. Himmelberger, Lansing, Mich. (*Journal A. M. A.*), offer a method of determining quantitatively the albumin in sputum with which they have been experimenting for the past two years and which gives good results. "A quantity of sputum, not less than 10 c.c. is collected in a dry receptacle in the usual way. (Samples containing blood should be rejected, as blood invariably contains albumin.) After smears for microscopic examination have been made a quantity of sputum not exceeding 10 c.c. is poured into a 50 c.c. graduated glass-stoppered cylinder. To this is added three times its volume of water containing 1 per cent. acetic acid, diluting the sputum to 25 per cent. After vigorous shaking with the stopper in place, the mixture is filtered through filter paper directly into a graduated centrifuge tube and 10 c.c. collected. To this is added 5 c.c. of 5 per cent. solution of potassium ferrocyanid in water and the tube whirled in a centrifuge for five minutes at average speed. The amount of albumin is most conveniently recorded in volume per cent., each 0.1 c.c. on the tube being 4 per cent. by volume after correcting for the original dilution. Absolute accuracy is impracticable in this work, so only approximate results should be recorded. If desired, the volume per cent. may be calculated to weight per cent., according to the method of Purdy for urinarysis." They have employed this method of examination in over 300 sputum cases, of which they give a tabulated statement. According to the author's experience, potassium ferrocyanid used thus does not give a precipitate with normal saliva or gastric juice. They believe that albumin sputum in an indication of tuberculosis, and that its amount bears some relation to the activity of the disease. Its absence or presence only in traces excluded tuberculosis in the large percentage of cases. Its determination is one of the most important aids to the diagnosis and prognosis that have been introduced in recent years. The method described is simple and as easy as determination of albumin in the urine.

EUGENICS AND THE PREVENTION OF DISEASE.—Commenting editorially on the "Distinction Between Eugenics and Prevention of Disease," *American Medicine* says there is a tendency on the part of the popular mind to confuse the two movements—to the injury of each. "For instance, the increasing demand that couples wishing to be married should present evidence of some sort that they are not diseased in any way which would be injurious to the other partner or to offspring, is bound to result in a tremendous betterment of public health. It will lessen the number of women innocently infected by husbands and there will be fewer deaths and fewer sterile women and fewer who pass a miserable weary existence, blaming matrimony and pregnancy, which really increase health and happiness and prolong life. Physicians seem to favor this movement and some advise the enactment of laws making such prenuptial certification compulsory, though there is considerable doubt as to whether an effective examination of young girls about to be married would not be resented at present as too immodest to be tolerated. Young men no doubt will be restrained and will try to keep healthy when they realize the demand for some kind of safeguard for women. Discussion then is likely to bring out practicable suggestions. All this is commendable, but it must not be called eugenics in any sense of that much misunderstood movement. People kept from matrimony by temporary sexual illnesses might be the best of breeders from

the social view point. They must be classed with those suffering from diphtheria or smallpox—temporarily unfit.

It might be said that to prevent a child being blinded from an infection acquired during parturition or prevent mental defect from syphilis acquired before birth, may cause many babies to be well-born who would otherwise be ill-born, but this is no more eugenics than preventing tabes or paresis by guarding one from syphilis in later life. Hygiene and sanitation prevent all kinds of deformities due to disease, but eugenics concerns itself solely with non-infectious transmissible abnormalities.

Eugenics is the science of being "well-born" or eugene but not necessarily free of disease. As the subject of heredity is little understood, we have made scarcely a beginning in finding the reasons why some are ill-bred or cacogene though born of apparently eugene parents, and why most of humanity are eugene in spite of badness in some ancestor. We cannot take steps to prevent the birth of all cacogenes until we know what causes them, though we are on safe ground in excluding from matrimony those who cannot possibly have normal offspring—the mental defectives, deaf mutes and certain epileptics. This is merely a negative eugenics, yet even here we must go slowly because the borderland between these extreme cases and the strictly normal is very broad. In a sense it might be said to include all humanity for no one is perfect. We do not know enough about the tricks of heredity. People are not infrequently shocked to find on genelogical research that some ancestor was a scoundrel. It is quite possible for one generation to be abnormal from some temporary cause and yet regeneration take place upon restoration to a normal environment. It would be a sad world if all our acquired badnesses were transmitted. On the other hand, our "best people" often prove to be the worst breeders, having offspring who are burdens to themselves, parents and society—and we haven't the remotest idea why. Criminals generally come from respectable families, consequently the sterilization of criminals can have little effect in reducing the criminality of the next generation. As for positive eugenics or selection of mates to improve the breed like cattle, we need only mention it to condemn. Practical eugenists never think of it. Even among royalty where selection is generally for state reasons, personal preferences have great weight.

The environment selects the fittest and nothing except trial will determine what are the fittest. Even if we knew what was the best type for present day civilization and could breed up that type, it might be utterly unfit for the conditions a century or two hence. Sparta made the greatest blunder of history in her positive eugenics. She bred up only soldiers, and killed the physical weaklings, even though they may have been mental giants who could have preserved the state. When the new stress came she had no defenders and disappeared. Japanese royalties for over a thousand years have carried on a most rigid eugenic system, but they have ruthlessly condemned to celibacy the surplus stock not needed to keep the family alive. Only about 150 now exist. Commoners can not do this as the environment is not as unchanging and restricted. We might breed up a type which like the Spartans would perish in a changed environment. If none but big blonds had been selected by the French to colonize Louisiana, there would now be no French there, as the sole survivors of the mixed immigration are solidly brunet. We then must let matters run on as they are, supply every conceivable type and let nature make her own selection as she will do this anyhow. She is the great eugenist, but she works by killing off the unfit. Let us remember that some of our best men are great by reason of nervous characteristics which unfit them for parenthood. Some of the physically perfect haven't sense enough to warrant survival as a type. Few men are perfect physically, mentally and morally. None are superlative in all three respects, and even if there were any, they might be very unsuited for the future. That is, we cannot breed a best type because we cannot tell what it is or will be.

Exaggerating the power of heredity is the besetting sin of the students of this subject as we have often remarked. Unless the tendency is checked by physicians we will drift into a false position. Specialized workers always do magnify the importance

of their own field, and carry the world with them if they are persuasive. Much attention is now being given to imbecility and other nervous defects and the idea has been expressed in a popular article that "with the rarest exceptions the cause of imbecility is heredity and heredity alone." We must protest against the serving up of such nonsense to the lay public who are not able to detect its essential absurdity. It it were true, then an imbecile's ancestors would be imbeciles back to the first pair. As the whole race is decended from only a few individuals of primitive stock, we ought all to be imbeciles. There is no question that imbeciles do appear in defective stock far more often than in normal, but the process must have had a beginning sometime. Every defect has a cause somewhere. We as physicians must look for the cause and not sit down like fatalists saying it is God's will—heredity. Only a savage's god would will that—by Binet's test 30 per cent. of school children should be subnormal. As a matter of fact much imbecility has been traced to toxemia, mostly syphilitic, though any maternal infection will cause abnormal fetal development. Then again it is an accepted fact that a large number of the 30 per cent. subnormals are results of defective nutrition. Instead of being unpreventable results of heredity, the vast majority of man's woes are brought on himself by his own ignorance of proper ways of living. They are strictly preventable, environmental and not transmissible. It is absurd, for instance, to forbid the marriage of a man and woman simply because tuberculosis has appeared in each stock. That policy would exclude nearly all civilized races. As a fact we are coming to think that neither this disease nor the tendency to it is hereditary, as we all contract it in infancy and as it remains latent and harmless unless we lose immunity from some other adversity.

The real results of heredity are often overlooked. "Subnormal" school children while mostly due to underfeeding or disease are often perfectly normal specimens of lower races who have not evolved the brain of the higher. These arrested races have developed enough intelligence for survival in their particular ancestral environments and that is all nature ever does for man. In the north of Europe it required more brains to struggle for existence in primitive times and only such variations did survive. The low types flocking here from central or southern Europe inherit their lowliness and never can develop highness in their offspring except by nature's murderous way of killing the least intelligent. Of course they might mate with higher types as has been suggested by those who are more interested in raising the lowly than in lowering the best. The scum of Europe comes here with the rest and will be with us always. Here is the place for pessimism, not the preventable defects arising in the upper races. Heredity preserves type if the environment permits and that is all there is to it. Those "subnormal" children who are really normal specimens of their race will remain "true to type" for all time even if they do learn how to read and write and vote as the boss orders. Education won't give them brains or make them capable of producing intelligent children. Pessimism here may lead to restriction of immigration as soon as people learn that low types only lower the race by amalgamation. True scientific eugenics would exclude them from marriage here if it could, but let them marry in the countries which evolved them as the fittest for those particular places.

INFANTILE PARALYSIS.—Noticing some misconceptions on the part of the laity and some physicians as to the curability of this paralysis, H. W. Frauenthal, New York (*Journal A. M. A.*), describes the methods of restoring function of the muscles in cases in which serious inflammation and degeneration of the cord has not yet taken place. As regards electric treatment, he believes in its application as soon as paralysis appears instead of waiting several weeks as advised by some authors. He has applied the high-frequency current along the spine in the first days of the paralysis and a sinusoidal current alternating with a combined galvanic and faradic current with contractions synchronous with the heart-beat using sponge electrodes at the origin and insertion of the affected muscles or muscle groups. He does

not put faith in the reaction of degeneration as indicating degeneration and irreparable damage to the muscles. The current used should be the weakest that will produce a contraction and must not be used after the contraction ceases or more than two minutes on one muscle group or more than twelve minutes at any one time. The good effects of massage are testified to, but too prolonged massage is an abuse. Use of hydrotherapeutic measures is a valuable adjunct of treatment, out he lays particular stress on muscle education by active and passive movements before a mirror. By the methods enumerated he has been able to exhibit at medical meetings forty-three patients practically cured who have been unable to walk for periods from nine months to four years in spite of treatment by physicians. Ten of these are reported in the paper, which is illustrated.

TUMOR OF THYROID.—A case of chronic malignant degeneration of the thyroid is reported by F. A. Carmichael, Osawatomie, Kan (*Journal A. M. A.*), who remarks on the peculiarities of certain chronic growths in this situation. His patient was a farmer, aged 50, who had noticed the growth since he was 15 years old. It did not grow larger than the size of a walnut until a few years ago. In 1907 it began to rapidly increase in size and had to be suspended from the neck in a very large handkerchief. The tumor was then removed; the entire right lobe, isthmus, and the major portion of the left lobe were taken away. Evidences of incipient myxedema appeared but gradually subsided on the development of a recurrence. Within a week the left lobe was enlarged and six months later a metastasis appeared on the manubrium, gradually increasing in size. The features mentioned here of special interest are the chronicity of the growth and the question as to the possibility of the neoplastic cells taking on the function of actually secreting structures. Sarcomatous changes in the thyroid do not differ in their course from those found elsewhere and most carcinomas also run a two or three years' course. Scirrhous growths are generally agreed to be rare, but certain malignant changes, especially of the adenocarcinomatous type, follow an extremely chronic course and are so insidious in their development that they were not considered malignant by earlier writers who even characterized their metastases as benign.

DIALYZATION METHOD FOR THE SERODIAGNOSIS OF PREGNANCY.—Dr. C. F. Jellinghaus (*American Journal of Obstetrics*) contends that the dialyzation method for the serodiagnosis of pregnancy is difficult, not because of any one detail but because of the very many details, a break in any one of which will spoil the test, no matter how perfectly the rest of the technic has been carried out. For example, when a dialyzer is filled with non-pregnant serum and placenta, and the mixture is covered with a layer of toluol, if any small particle of placenta remains on the inside wall of the dialyzer without being covered with toluol, this particle will putrify during the sixteen hours in the incubator, amino-acids will be formed and thus the test will be spoiled. Another very important step is the boiling of the 10 c.c. of dialysate with 0.2 c.c. of a 1 per cent. solution of ninhydrin. This amount of ninhydrin does not react to very small quantities of amino-acids, such as are found in the dialysate of even non-pregnant cases, when the latter is boiled one minute. But even when boiled one minute, the amount of evaporation may differ depending upon the flame, etc. It is, therefore, important that the evaporation should always be the same, especially in the test proper and control of a given case. To ascertain the amount of evaporation the fluid that is left after boiling one minute is measured. If this is not done we can readily fall into the following error. Given a non-pregnant serum to test, the control of placenta and inactivated serum comes out negative, while the serum plus placenta comes out positive. This result might lead one to condemn Abderhalden's claim unless the fluid remaining after boiling be measured, if measured the control may show 6 c.c. left, while the dialysate of placenta and serum shows but 5 c.c. left, after boiling one minute. In other words, not Abderhalden but the method of boiling was at fault. And so we may go on and mention innumerable possible pitfalls.

DANGERS OF ADENOID OPERATION.—Dr. H. Grove (*Australian Medical Journal*) controverts the generally accepted belief that the adenoid operation is a simple and absolutely harmless procedure, and in this paper he discusses the most frequent and dangerous complications of the adenoid operation. He places these in two general groups: first, the post-operative bleeding; second, post-operative infections His consideration of the complications in group 1 is dismissed with the statement that post-operative bleeding can be of a very severe nature, and he quotes from the literature in two instances, recording eleven cases of fatal hemorrhage after the adenoid operation.

The second group, the infectious complications of the adenoid operation, he considers in great detail, and takes up in his discussion the following post-operative complications: Fever, general sepsis, endocarditis, acute rheumatic fever, the acute infectious diseases of childhood, tonsillitis, adenitis, torticollis, lung infections and meningitis. and points out their casual connection with the bacterial content of the nose and naso-pharynx. The author reports two of his own cases in which, following the adenoid operation, there was, a few days later, an infection of the accessory sinuses of the nose.

In conclusion he warns against operating when there is any infectious process present in the nose, naso-pharynx or ear, and also during local epidemics of the acute infectious diseases of childhood, especially if the patient had come into any sort of contact with children ill of these diseases. And finally, he believes that this operation should be done in a hospital, and the cases kept under observation for a considerable period of time.

ACCURACY IN ANESTHESIA.—Dr. Karl Connell (*Annals of Surgery*) writing on this question concludes as follows:

1. Accuracy should prevail with the volatile anesthetics, as with liquid and solid drugs.

2. The content of drug per unit of alveolar air is the gauge of dose, expressed scientifically in terms of vapor pressure.

3. Such dosage is practicable by the anesthetometer, an apparatus to measure and mix anesthetic and other vapors and gases.

4. The advantages of accurate dosage are toward better induction and safer, more effective maintenance of any desired degree of anesthesia.

5. The dose should suffice in volume to supply the tidal capacity of respiration.

6. The vapor tension of ether required by man is constant. This tension is probably basic for all animal protoplasm. The attainment and maintenance of ether anesthesia may be plotted in advance.

A curve of ether pressure required in the alveolar air, plotted for the most advantageous etherization in man rapidly ascends in the preliminary stage to 130 to 182 millimetres or 35-45 per cent. by weight of ether to air at sea level pressure. After five minutes the curve falls, reaching 26 per cent. by the tenth minute when surgical relaxation becomes well established. Through the next half-hour the curve scales downward reaching 15 per cent. or a pressure of 48 millimetres by the thirtieth or fortieth minute. On this as a base line it runs for many hours, man of every type remaining in even, safe narcosis. The pressure must be decreased when the zone of life anesthesia or the zone of full consciousness is desired to be entered.

7. The best delivery is by mechanical insufflation of an automatically mixed and measured dose.

8. The most feasible insufflation is deep into the pharynx.

9. The most effective insufflation is into the trachea.

SMALL ENEMATA.—Dr. Alfred Guerin (*The Practitioner*) points out that small enemata, 5, 10, or 15 c.c. (1, 2, or 3 teaspoonfuls) in volume, are extremely convenient as a method for giving drugs and very useful in all cases in which these cannot be taken by the mouth; they may often be used instead of hypodermic injections. Enemata of this size have been recommended by several physicians, particularly by Monteuuis, for giving a first dose of morphia. A small enema syringe, holding ℥ss, or a urethral syringe with a short length of rubber tube attached, holding 10 minims, may be used, according to the strength of the solution used. *Laudanum* should be given in this

way, and not mixed with a nutrient enema or one of saline. The mixing is often difficult, and the desired effect is lost by too great dilution. A much more certain result is secured when a small enema of laudanum is given before the more important injection. A rectum, which will not tolerate a large quantity of fluid, will retain it quite well after this precaution. *Bromide of potash,* alone or with a few drops of laudanum, has given excellent results in patients unable to tolerate it by the mouth. It may be used alone for infantile convulsions. 10 gr. in one tablespoonful of water, and the dose can be repeated after an interval. *Belladonna* is very useful in small enemata, particularly in cases of painful enteritis with constipation and tenesmus. It may also be given to narcotize the posterior urethra and the neck of the bladder in cystitis, and in the painful stage of gonorrhea. For this purpose, it may be combined with morphia or extract of opium. Cocaine may be added with advantage, especially in congestion of the prostate. The pain of catheterizing, or of any application to the posterior urethra, may be lessened by giving a small enema about a quarter of an hour previously. *Antipyrine* is much praised by Monteuuis, when given in small enemata to children in convulsions, and for vomiting due to gastric troubles. In the furious fits of temper sometimes shown by children, a small enema of antipyrine has an immediate calming effect. A dose of from 4 to 8 grains, according to age, is given in a tablespoonful of water. Guyon and Ginard state that antipyrine soothes the bladder in pelvic neuralgias and dysmenorrhea. A little laudanum or cocaine may be added. The iodides, creosote, and arsenical preparations may be given in this way, but not mercurials or quinine; these last irritate the bowel. Monteuuis insists on the use of a small syringe with a short length of tubing drawn on to the nozzle. The length should be rather under 4 inches. Lucas-Championniere has shown that a longer tube only rolls up on itself in the rectum. Burlureau considers that it is the last part of the rectum which absorbs the best.

THE EXCESSIVE FEAR OF CONTAGION FROM CONSUMPTIVES.—Dr. S. Adolphus Knopf, head of the department of tuberculosis in the New York Post-Graduate Medical School and Hospital, in a lecture before the German Medical Society of New York, discussed some of the unfortunate phases characterizing the present world-wide struggle against tuberculosis and again condemned, as he frequently does, the unjust and unreasonable fear of acquiring tuberculosis by the simple contact with tuberculous patients. This is a most important subject, the more so, as the "phthisiophobia"—as Dr. Knopf designates this particular craze—has attacked and led astray not only the laity, but also physicians and municipal, state and even federal authorities. In consequence, the federal law of 1901 still remains in force, under which tuberculous persons are not permitted to enter the United States, even if they desire only to pay a visit to the country, thus being placed on a par with patients ill with the plague, cholera, or other virulent infectious diseases.

The writer well understands and is fully in sympathy with the iteration and reiteration of conservative counsel in this respect on the part of Professor Knopf, and he himself has contributed here and there to the advice that saner and less extreme precautions should be taken.

It may not be amiss once more to discuss this matter and to point out to readers the importance of counteracting in their clientele the unreasonable fear that exists among so many classes in this respect. Dr. Knopf will undoubtedly be glad to furnish reprints of any of the many papers which he has written on the subject, and the writer himself has a number of copies of the journal mentioned at the disposal of the "family" for distribution among their physicians.

Although the fact that tuberculosis is infectious and can be communicated—in fact is communicated—from person to person cannot be gainsaid, being firmly established since the investigations of Villemin (1864) and the discovery of the tubercle bacillus by Koch in 1882, still the mechanism of communication is somewhat different

from that of the acute infectious diseases, such as the exanthemata, diphtheria and influenza. Above all let it be remembered that a single contact with a tuberculous or consumptive person is not sufficient to establish in another person a virulent infection that invariably is followed by tuberculous disease. Indeed, it has been fully determined by wide clinical and experimental experience that not only repeated and long-continued exposure to infection, together with a receptive condition of the organism, but a predisposition is required, to lead to tuberculous disease. The only exception for this rule, perhaps, is in the case of persons whose resistance to the infection and to the harmful action of the tubercle bacillus has been seriously impaired by previous diseases, such as measles, whooping-cough, typhoid fever, and influenza; by prolonged night vigils and exertion, as in taking care of a very sick member of the family besides attending to the usual duties of housekeeping; by worry, due to the same cause, or by other deviltalizing influences.

It remains a fact that, except in the case of such a serious impairment of the resistance, a single or even several repeated exposures will not suffice to determine an infection productive of disease.

Early in the eighties Professor Straus, in Paris, found that the medical students and internes as well as visitors to his hospital and especially to the consumption wards harbored in the mucus of their nares large numbers of tubercle bacilli that proved virulent upon inoculation into cavies. These students and internes of course were exposed to contact infection with reasonable frequency, and, yet, owing to an efficient resistance, also to the fact that they were obliged to be in the open air more or less, as well as to other factors, not one of them acquired tuberculosis.

Furthermore, it is a well-known phenomenon that physicians and nurses, even if they exclusively care for consumptive patients, very rarely acquire the disease, not because this is not contagious, but because ordinarily adults are sufficiently resistant to be able to overcome the results of an exposure to this infection.

It is true that in the case of children, and especially of infants, conditions are not quite as favorable and that the little ones are all too frequently infected by consumptive attendants, whether they be brother or sister or mother or nurse-girl. Yet, even in such cases the infection need not necessarily lead to an immediate disease, but may remain latent until puberty, when a superimposed infection or a weakening of the organism through undue exertion or through disease may arouse the latent infection to a virulent progression.

There are other reasons why at the present time the contact with consumptives, at least with such as have received the benefit of expert advice and have the good sense to follow it, is not necessarily dangerous. These patients are informed that they may become a source of danger to those with whom they live if they are not careful in regard to their expectorations. They are taught never to breathe or sputter or talk into the faces of other persons, always to cover their mouth with a cloth or a bit of tissue paper when coughing and these to be burned afterward, always to wash their hands if these have become contaminated with sputum, and in other ways to do all in their power to avoid communicating the germ of their own disease to others.

Of course, it is only the careful consumptive and the tuberculous patient whose sputum does not contain tubercle bacilli who is not a source of danger. The careless and inconsiderate, promiscuous spitter is a criminal who needlessly endangers the life and health of his neighbors and should be isolated in an institution, while the advanced, progressive, bed-ridden consumptive who is too feeble and ill properly to take care of his expectoration is isolated *eo ipso* and must be taken care of as any other patient suffering from an infectious disease.

As a whole, we may safely assure our patients and their sisters and cousins and aunts that there is comparatively little danger of contact infection from tuberculous patients, that efficient care on their part and a proper hygienic mode of life on the part of the well will both prevent infection and render it innocuous if it should be unavoidable.—*Ex.*

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A NEW OPERATION FOR UNDESCENDED TESTICLE.

In the *Centralblatt fuer Chirurgie*, A. Schaefer publishes a method for operating on the undescended testicle, which procedure is a combination of Witzel's and Longard's method. In unilateral cryptorchism the operation is performed in the following way: The cord and the testicle are dissected free, and now the cord is slowly stretched to the extreme. Then follows the occlusion of the inguinal gap, after Bassini. The *septum scroti* is now split and through this cleft the normal testicle is forced into the empty half. Both testicles are now fastened to each other by means of a few silk sutures that perforate the albuginea only. One of these sutures is left long and is put through the lower pole of the ectopic testicle; the ends of this suture are now made to perforate the skin of the normal half of the scrotum. Both the testicles are now pushed into the normal half of the scrotum and the split in the septum is closed as tightly as possible. The cord of the ectopic testicle is fastened to the external ring by sutures that include the coverings of the cord only. After the skin incision is closed the suture that runs through the lower pole of the normal testicle is fastened to the skin of the thigh of the normal side. A carefully applied dressing protects the wound and this guy-rope from infection by urine or feces. After ten days, during which time the patient is kept in bed, the guy-rope is severed close to the scrotum and after another week the patient is discharged.

In bilateral cryptorchism the operation is conducted as follows: Both cords are stretched after the above-mentioned fashion. Bilateral herniotomy after Bassini, fixation of both cords at the external rings, splitting of the *septum scroti*, both testicles are sutured together at their medial surface, a guy-rope is led through the lower pole of each testicle, each of these guy-ropes is led through the skin of the scrotum of its respective side. After the skin incision is closed the guy-ropes are fastened to the skin of the opposite thigh. The author asserts that he operated in two cases of bilateral cryptorchism in this way and that in both cases he accomplished an excellent result, which still obtained after a year. The author evidently must have been fortunate enough to have dealt with very favorable cases, because in any kind of a difficult case the stretching of the cord would certainly not be sufficient to bring down the testicle into the scrotum. It, furthermore, must be remembered that any kind of plastic work that has to rely on tension attachments will furnish more failures than successes. One also feels like taking exception to the statement that Katzenstein's, Keetle's and De Beule's method are the most popular ones. Any surgeon who has ever operated after the method devised by Bevan and Bayer will certainly not abandon this method in favor of the pro-

cedure proposed in the reported article; and, judging from the literature, the majority of the surgeons are using the Bayer-Bevan method.

THE CO-EXISTENCE OF SYPHILIS AND CANCER OF THE TONGUE.

The association of cancer of the tongue and syphilitic lesions of that organ is well known to syphilologists and dermatologists. Cancer not infrequently develops upon an old patch of leukoplakia or in an old syphilitic scar of the tongue. But it is much less common to see tertiary lesions evolve during the existence of a malignant growth of the tongue. Such a case is described by MM. Chifolian and L. Duraeux (*Annales des Malades Ven.*, No. 5, 1913), in a man, aged 44, who in March, 1912, complained of stiffness of the tongue and soon afterwards several hard painless swellings appeared. These became the size of nuts, approached the surface and ulcerated. The tongue was swollen, salivation and difficulty in mastication were prominent symptoms. In October, 1912, the tongue was greatly increased in size and thickened at the edges. The ulcerations varied in size from that of a lentil to that of a half franc piece. The lingual tissue felt hard and indurated. The glands were enlarged at the angle of the jaw and salivation was profuse. The diagnosis of syphilitic gummata was made and on October 24 an injection of 0.45 grm. of neosalvarsan was given intravenously, this was repeated on October 31. By November 6th, the tongue had diminished in size to one quarter of its previous volume. The next day a third injection was given. On November 18 the tongue was nearly healed, the ulcerations had disappeared, but a feeling of induration remained. Salivation was still profuse, but the patient complained of lancinating pain. Rapid loss of weight ensued and the glandular enlargement became more marked. The Wassermann reaction was positive. A biopsy at the seat of the older nodules revealed enormous irregular epithelial proliferation. Death took place a fortnight later. It seemed as though the neosalvarsan stimulated the development of the lingual cancer.

THE SAFETY OF ALUMINUM VESSELS FOR COOKING PURPOSES.

When aluminum vessels were first introduced into domestic life some doubt existed as to their safety, and the question arose as to whether in the cooking of foodstuffs a sufficient amount of aluminum might not be set free to exercise an effect upon the body. Increasing experience has pretty well proved that such objections do not exist. Nevertheless, a recent contribution on this subject by Dr. John Glaister, who is well known for his work in toxicology, is of interest. He made experiments to determine whether the cooking of ordinary articles of food produced much effect upon the metal, the foods varying from bacon and milk to oranges and lemons in the preparation of marmalade. He also studied the effects of common salt, tartaric acid, distilled water and hard water, and used various vessels such as frying-pans, saucepans and stewpans. The result of his investigation is that the largest amount of aluminum found in the foodstuff was when making marmalade with oranges and lemons, but the amount which was recovered was exceedingly small and would have been perfectly harmless even if the entire two and a half ounces of preserves had been eaten at one meal by one person. These investigations confirm an earlier series carried out in the *Lancet* Laboratory on a previous occasion.

NATURE OF MIGRAINE.

Authorities since the time of Day have looked upon this affection as a recurrent "brain storm" (not involving the psyche); as a periodical "discharge" phenomenon, the nearest relative, although far removed, being epilepsy. About this primitive conception there has grown up a mass of subsidiary dogmas which lead nowhere. Of great interest, however, in this connection is the mysterious phenomenon known as scotoma scintillans, which often accompanies migraine yet occurs just as frequently without

the latter. Attacks of non-migrainous scotoma occur without any periodicity—one may have two, three or more attacks daily and then be free for six months or more—yet they are almost always accompanied by a slight boring pain in the occiput, nervous instability, etc. The time appears to be propitious for an anatomical or physical factor to be brought out in this connection. At a recent session of the Aerztlicher Verein of Hamburg (*Münchener medizinische Wochenschrift,* August 5) Auerbach announced that after prolonged study he had come to regard migraine as a syndrome due to the fact that the cerebrum on a given side was too large for the cranium. Given this as a basic factor, any vasomotor disturbance might bring on a hemicranic crisis. The truth of this conjecture has yet to be demonstrated; but as migraine is such a common condition there is plenty of material available for research. In discussion Schmidt emphasized the possibilities of lumbar puncture in this affection. If the latter were due to the closure of the foramen of Monro, lumbar puncture might cause this to reopen.—*Ex.*

SEX HYGIENE.

Recently there appeared in the *Medical Record* an interesting editorial on that much discussed subject—the teaching of sex hygiene in our public schools and which we herewith quote in full, perhaps, because the writer's opinion rather coincides with our own.

"Probably nothing better illustrates the old adage that a little knowledge is dangerous than the present campaign for the teaching of the so-called sex hygiene in the public schools. The public has just been made to realize by the medical profession the direct as well as the indirect effects of sexual diseases, and the necessity for preventing them. But in its enthusiasm the public has failed to see the proper methods of application and the difficulties of application, as well as the profundity of the whole subject. The enthusiasts seem to think that the ones to be taught are the young, probably on the principle that if they are forewarned of the dangers long before they arise, they will be able to anticipate them. Were the latter a fact the campaign would be well advised. There is little doubt that, while sexual diseases are present in the young, the amount due to ignorance is very little and is negligible. The majority is due to non-sexual infections from adults. Sexual diseases usually have inception in adults and it is the adult who must be educated if he does not already know. It is he who has sufficient understanding to appreciate the real and not the analogous or illustrative value of sex teachings. It is he who must face the world where sex diseases must be counted as one of the adversities. And whether moral teaching of the adult will result in continence is still an ultra-medical question. Suffice it to note that merely a proper understanding of the dangers of incontinence alone does not always act as a check, as shown by the fact that infection among medical students is probably as large as among any other student class.

The sex maturity of children of the same mental and physical age varies so much that a general teaching of this subject cannot apply with equal force to all. The likelihood, then, that some will learn it in a hazy and vague manner is especially dangerous, for in discussing this among themselves the subject will become distorted, with an obvious tendency to work harm. Will not the children who have vicious sex habits have the best opportunity to impress them upon the others? It is a question how much children can learn by sex teaching with plants as objectives, and how far this will go to explain the human organism; or how far the explanation will prevent harm. It is quite possible that the natural propensity of children for experiment will open fields of abuse which ignorance at least would not.

Sex hygiene should be taught—but to the parents. It is too intricate a question for the young, when so many parents are ignorant regarding this subject. Parents should be taught sex hygiene, and they should be taught to impart that knowledge gradually and at the proper time according to the maturity of their own children. The child should get just as much of this knowledge as it is able to appreciate from its physical, sexual and environmental development. There will then be no danger of experiment and abuse from discussion of the subject between the children.

ALCOHOLISM IN RUSSIA.

To the student of Russia civilization the prevalence of alcoholism will account in a large part for the barbarianism, superstitiousness, and a low grade of morality of the masses. Just how early in life the Russian begins to drink *vodka* (spirits), the following figures taken by *Roussky Vratch* from two Russian newspapers show: In the Government of Saratoff seventy-nine per cent. of the boys and forty-eight per cent. of the girls, ranging in ages from five to ten years, drank either spirits or beer. Of the 1,350 boys and 600 girls questioned, 296 boys and 35 girls drank to intoxication. In the Government of Pskoff of 5,101 children investigated, eighty-three per cent. of the boys and sixty-eight per cent. of the girls drank, the ages ranging from six to eight and in some instances from three to four. Of 4,034 children thirty per cent. of the boys and eight per cent. of the girls drank to intoxication. It is recorded in history that when Vladimir the saint was choosing a new religion for the Russian people he rejected Mohammedanism on the ground that it "does not permit drink and a Russ can't be without it"—*Ex.*

THE VALUE OF TROUBLE.

Life is but a school; from its beginning to its very end the lessons learned that are of the greatest value to us are those which we have struggled to learn. The world is a grand old place and we are pretty sure of the reward we deserve. We may grumble and growl at adversity, we may moan and make miserable over misfortune, we may shake under our trouble, but in our inmost hearts we know why we suffer and that the faults that would be convenient to lay on the doorstep of others belong to us. We know what we should do if opportunity be granted us again, and with profit we should be governed by our experiences of the past, avoiding those very things that have brought disaster.

Trouble is a good thing. It checks recklessness, opens the eyes of the blind plunger and draws the unappreciative with a sense of appreciation. As a boatman blindly piloting his craft in an unknown stream receives a bump or two from a hidden rock, which teaches him that there is danger in ignorance, so it is with us all, and at its worst, trouble is but another word for commanding caution, warning, danger. As the misfortunes, the missteps of others are of value to us in our struggles for attainment, so are our errors of value. We would avoid them if we could. We should avoid them; but when they come to us let us bend our shoulders to their burden or pluckily get beneath and throw them off, and let us do it ourselves. It will make us stronger, better men, independent, progressive, and dauntlessly ambitious. It will make of us the very men the world needs, and needs badly.—*Brief.*

THE TOMATO: ITS ALIMENTARY VALUE.

In medical circles, as well as among the laity, there is a certain prejudice against the tomato on the assumption that it predisposes to gout and to vesical calculi on account of its high oxalic acid content. It is, however, a fact that these diseases are comparatively rare among the nations for which the tomato forms a staple article of diet. Albahary stated in 1907, that the high acidity of the tomato is due, not to the oxalic acid, but to the presence of malic acid, which is also found in unripe grapes, in cherries, raspberries, currants and sour apples. It is well known that cider merchants claim that cider cures gout. Malic acid is also found in oak leaves, accredited with antirheumatic properties in some countries.

Oxalic acid, according to Albahary, is present in faint traces only in the tomato. I have never found any traces of oxalic acid in the filtered juice of canned tomatoes, which is rich in soluble calcium salts. Oxalic acid is precipitated by calcium salts and would therefore be detected without difficulty if present.

The existence of free acids in the tomato is denied by Charles (*Gazette Hebdomadaire des Sciences Medicales,* July 20, 1913). This statement is based on the following tests: (1) When a fluid containing both free and combined acids is shaken with ether the free acid is absorbed by the ether. When this test is applied to the filtered

juice of tomato the ether does not give an acid reaction. (2) 20 gm. of tomato pulp was divided into two portions. One portion was rendered alkaline by the addition of calcium salts and incinerated. The ashes were dissolved in water and the acid portion of the pulp added. The mixture gave an alkaline reaction, indicating the presence of an acid salt in the tomato, i. e., a salt formed by one molecule of the alkaline base and two molecules of an organic acid. Consequently, on mixing the alkaline base liberated by combustion with the two molecules of acids the resultant mixture will be neutral. The acidity of the ripe tomato is due to a bimalate made up of two molecules of organic, combustible acid and of an alkaline, mineral base. To determine the identity of this mineral base the ashes of neutralized tomato pulp were dissolved in boiling water, filtered and the filtrate acidulated with acetic acid. After the effervescence had ceased sodium bitartrate was added. Potassium bitartrate was precipitated. It is estimated that 100 gm. of tomato pulp contain 1.25 gm. of cream of tartar. The principle base is tomatoes, as in most acid fruits, is therefore, potassium, and potassium bimalate is the principal salt. The acid taste of the tomato is not due to higher acidity but to absence of sugar and to the peculiar taste of the bimalate.

Tomatoes, if eaten in moderate quantities, give rise to the same metabolic changes as in all acid fruits not containing oxalic acid: the malic acid is destroyed with liberation of the potassium which then renders the body fluids alkaline. There is therefore a physiological basis for the craving for acid fruits, and for tomatoes especially, exhibited by individuals of a rheumatic diathesis who are heavy meat eaters and indulge freely in alcoholic stimulants. The mixture of potassium bitartrate and sodium bicarbonate, baking powder, so commonly used by the meat-eating nations, is not sufficient to neutralize the acids produced by the excessive meat diet, hence acid fruits are instinctively added to the diet.

Oxalic acid is found in considerable quantities in sorrel, the stalks of rhubarb and in some varieties of peas.—*La Tribune Medicale.*

THE AVERAGE LENGTH OF LIFE.

Four hundred years ago the average length of human life was between eighteen and twenty years. One hundred years ago the average human life was less than thirty. The average human life today reaches nearly forty years. This shows what medical science has done for human life.—*Ex.*

NEW BOOKS.

INTERNATIONAL CLINICS.

An examination of Volumes II, III and IV of the Twenty-second Series of International Clinics, shows them to be of exceptional worth. They are filled with strong papers in every department of medicine. The publishers are to be congratulated on the material they offer the profession in the above series (1912).

A list of the papers in each issue follows:

Volume II contains: Management of Sunstroke. A Lesson in Hydrotherapy. Principles and Practice of Spondylotherapy. Headaches and Tender Points in Diagnosis. Psychic Hypertension—Restoration of Mind Control by Motor Training in Relaxation. The Role of the Streptococcus. Food—What It is and What It Should Be. The Public Health Laboratory. Pellagra. A Lecture on the Present Status of Epidemic Poliomyelitis. Beriberi and Its Prophylaxis. Large Syphilitic Tumor of the Liver. The Dangers of the Underfeeding of Infants. Can We Prevent the "Bottle-fed Baby?" Atypical Multiple Sclerosis; Atypical Epilepsy; Cerebral Syphilis with Motor Aphasia and Right-sided Hemiplagia; Cerebral Syphilis with Left-sided Hemiplagia. A Symposium on Anesthetics. Direct Methods of Examination of the Larynx, Trachea, Bronchi, Oesophagus and Stomach. Observations on Surgery of the Kidney.

Puerperal Infection. Some Ocular Manifestations of Hysteria. Cerumen (Wax) in the Ears. The Science and Practice of Eugenics or Race-Culture. The National Insurance Act (1911) for the United Kingdom.

Volume III contains: Professor Ciesielski's Theory of Sex Determination. How It Happens that the Offspring of Plants, Animals and Men is Sometimes Male, Sometimes Female. The Tonus of the Vagus. Modern Treatment of Gout. Treatment of Chronic Endocarditis. Massive Intramuscular Injections of Double Hydrochloride of Quinine and Urea in the Treatment of Pneumonia. Deceptive Onset in Lobar Pneumonia. Diagnosis and Treatment of Locomotor Ataxia. Spontaneous Gangrene, with Record of a Case Illustrating the Ordinary Senile Type, Resulting in Spontaneous Amputation and Spontaneous Gangrene Affecting the Several Extremities Successively in the Course of Acute Primary Infectious Endocarditis. Difficulties Encountered in Differentiating Between Ulcer of the Duodenum and Diseases of the Cecum, Appendix and Lower Ileum. Tuberculosis of the Genito-Urinary Organs. Cancer of the Hollow Viscera of the Abdomen, with Special Reference to Diagnosis. Epileptic Masks and the Differential Diagnosis of Epilepsy. The "Acute Abdomen" in Children; with Special Reference to Rarer Forms of Generalized Peritonitis and Acute Tuberculous Complications. Adult Flatfoot. Death Following Two Cases of Operative Fixation of Fracture of the Shaft of the Femur. The Lorenz Operation for Congenital Dislocation of the Hip. Breast Malignancy; A Plea for Early Operation and Extensive Dissection. Lymphatic Oedema; Elephantiasis: Observations and Remarks, with Report of Operations. Value of Exercises in Treating Certain Cases of Acquired Inguinal Hernia. A Year's Work in Appendicitis by Deaver. Notes on Some Interesting Eye Cases. X-ray in Obstetrics; Radiographic Diagnosis of Pregnancies. Recognition and Treatment of the Complications of Gonorrhea in Women. Occupational Hygiene in the Navy. Industrial Poisoning.

Volume IV: Parathyroid Treatment of Paralysis Agitans. Treatment of Diabetes. Clinical Inferences to Be Drawn from the Wassermann Test. Treatment of Exophthalmic Goitre. Some of the Clinical Phenomena Associated with Arteriosclerosis. Diagnosis and Treatment of Obscure Cases of Pyelitis and Hydronephrosis. Pyelitis: Its Clinical Varieties and Treatment. Specific (Neisserian) Proctorrhea. Dulcamara Poisoning. Gastric Dyspepsia Due to Intestinal Diseases and Intestinal Indigestion of Gastric Origin. Simulants of Nervous Exhaustion. Natural Selection: The Etiological Factor in the Decrease of Tuberculosis. Features of the Normal Heart. Enucleation of the Tonsils and Removal of the Adenoids and of the Lingual Tonsil by Simple Methods. Prognostic Value of an Immediate Examination of Peritonitic Exudates. Weak Feet. Indications for Nephrectomy, with Illustrative Cases. A Case of Stab-Wound of the Heart: Transdiaphragmatic Pericardiotomy; Recovery. Wherein the Diagnosis of Pellagra is of Surgical Importance. Surgery of the Thymus Gland, the Thoracic Lymphatics, and the Vagus Nerves. Anorectal Fistula. Some Plastic Vaginal Operations. Use of the Stem Pessary for Amenorrhea and Dysmenorrhea: Stenosis and Ulcer of Labia: Rubber Gloves: Laceration of the Cervix and Perineum. Benjamin Rush, 1945-1813. Aid Association of the Philadelphia County Medical Society. Rockefeller Institute for Medical Research. Relation of Prison Life to the Development of Insanity Among Prisoners.

Philadelphia: J. B. Lippincott Co., Publishers. 1912. Price, $2.00 per volume.

THE CENTURY.

No prospectus for the year 1914 could express the "new spirit of the Century" so well as the current and the future numbers of the magazine. The program already drawn up is rich and varied, although *The Century* is too close in touch with matters of current interest to tie itself down to a twelve months' program in advance. A prophetic trilogy by H. G. Wells will begin in the January number. This is the work of the modern prophet and seer who writes like a pure romancer. The February *Century* is called the "Midwinter Fiction Number," and contains a group of short stories which

alone would make this issue notable. Among these is one by the author of "Madame Butterfly," in which John Luther Long returns to the scene of that classic which, since it was printed in *The Century* in 1898, has developed first into a play and then into a beautiful opera. The new story is called "The Temple of the Countless Gods." About half of each number of *The Century* will be devoted to fiction. As the editor declares that "this is, in a real and vital sense, the very age of fiction, we plan that each number beginning with the November Century shall contain, in addition to a leading article on modern conditions, an exceptional fiction feature." In a magazine of the size of *The Century* this leaves ample space for art, poetry, economics, history and humor.

Among the papers on vital American subjects scheduled for 1914 are those of Prof. Edward A. Ross on Immigration. These are already making the deep impression that the publishers anticipated. It is proposed that the magazine shall continue to lead in literature and art and to be "the leading art magazine of America." The comic section of *The Century,* "In Lighter Vein," as showing unusual vitality. It is edited on the theory that the best writers and artists enjoy touching upon life in a sprightly way.

THE PREVENTIVE TREATMENT OF RETROVERSION.—Dr. J. Lowe (*American Journal of Obstetrics*) thinks that the persistent dorsal position after labor the most common cause, frequently associated with a torn perineum that had not been repaired. The primary suture of the perineum and early change of posture after labor would help to prevent retroversions. Bimanual reposition some six weeks after labor would also be a help. Not all cases of retroversion needed operation. He knew one case where a post-operative neurasthenia made the woman worse than before. She now thought she had a double uterus giving double symptoms. Operative treatment was not always successful. Recurrence followed the Baldy-Webster operation as recommended by Dr. Neill as well as the other operations. His own preference was for the Alexander-Mayo operation. Operations on the utero-sacral ligaments at times also gave excellent results.

THE ACTION OF CERTAIN OILS UPON THE UTERUS.—In the olden times the oils of tansy, pennyroyal and savin had considerable reputation as emmenagogues or abortifacients, notably pennyroyal. More recently apiol, derived from parsley, has been largely used as a substitute for these oils. It has been recognized for a long time that these substances cannot be used as abortifacients with success unless the dose which is given is so large as to produce abortion by means of the general poisoning which ensues. In the *Journal of Pharmacology and Experimental Therapeutics* for July, 1913, Macht has studied the influence of pennyroyal, savin, tansy, rue, thyme, turpentine, and apiol upon the uterus of the cat, pregnant and virgin. The results which he obtained show that all of these substances, even in large amounts, exerted no stimulating action on the uterus; on the contrary, they caused it to relax, and even paralyzed it, and the tracings which accompany Macht's papers certainly show that his interpretation of his results is correct. We, therefore, have experimental evidence confirming the decision heretofore reached by clinicians and already mentioned that the "emmenagogue" and abortifacient action of these oils is entirely due to gastrointestinal irritation or general constitutional poisoning and not to any specific influence upon the uterus.—*Thera. Gazette.*

THE BEDBUG SPREADS TUBERCULOSIS, according to Dr. J. Walling Beveridge, of New York. The evidence is accumulating that it is an insect as dangerous to human life than the fly or mosquito. It has been known for some time that it is responsible for the spread of typhus fever, and recently it has been charged with the causation of leprosy and epidemic spinal meningitis. That it may also serve as a carrier for tuberculosis seems extremely likely. The fact that the begbug may live for six months or more without food makes it especially hard to get rid of, and naturally increases its danger to a considerable extent.—*Ex.*

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THE EARLY RECOGNITION AND THE PRACTICAL PREVENTION OF UTERINE CANCER.

By W. S. SMITH, M. D., Baltimore, Md.

A careful estimate places the number of deaths from cancer in the United States at 80,000 annually—enough to depopulate the City of Baltimore in a very few years. When we consider the relation of our own population to that of the entire world, and think also of the number of cases that are cured, not to speak of those persons who are erroneously reported to have died from some other cause, we can begin to form an idea of the appalling prevalence of this scourge, which is world-wide in its devastations. Of the number of deaths mentioned, it is said that at least one-half could be prevented by an early diagnosis. If this statement be even approximately correct, it seems unfortunate that so much money and thought and energy should have been expended in a fruitless search for the essential cause of cancer, while so little has been done to elaborate methods for its earlier recognition, to study the clinical facts in regard to it, and to treat in a practical manner the great problem which it presents. Recently, however, the plan of attack has been along the lines of which I have spoken, and scientists and laboratory workers are earnestly searching for the much-coveted diagnostic key, practicing physicians everywhere are discussing the subject from a clinical point of view, and organizations and philanthropists are busy themselves with *conditions* which need amelioration as well as *theories* which need support.

It is my purpose to speak only of cancer of the cervix uteri, and to present briefly some of the signs and symptoms which may be utilized with advantage in dealing with it in its early and curable stage. First, as to the symptoms. These may be given in a general way as pain, hemorrhage and discharge. It is constantly to be borne in mind, however, that there is no symptom of cervical cancer which is present in all cases, and, in some instances, all the ordinary symptoms may be absent until the inoperable stage has been reached. This fact is one of great practical importance and gives great emphasis to the necessity of a physical examination in all cases in which there is the slightest suspicion of malignancy.

Of the symptoms which I have mentioned, hemorrhage is by far the most important and the most ominous. It may first appear as a prolongation of the regular menstrual period, or as a slight bleeding in the menstrual interval, in the form of a spot of blood upon the clothing or a slight streak in the leucorrheal flow. This apparently insignificant intermenstrual hemorrhage is said to come from the capillaries in the mucosa which overlies a cancerous nodule or from the diseased tissue itself, and is particularly apt to follow any kind of irritation or pressure upon the affected parts; such, for example, as that caused by long walking, straining at stool and sexual intercourse. In cases where the menopause is supposed to have been passed, the hemorrhage of cancer is frequently regarded with complacency, if not with satisfaction, because it is thought to indicate a re-establishment of the menstrual function. The secret of many delayed cases of cancer lies in this belief, which has hitherto had wide acceptance among women. All the forms

of hemorrhage to which I have referred, in a woman between 35 and 60, furnish a sufficient reason for a careful physical examination.

Leucorrhea may be present before there has been any pain or hemorrhage, and some surgeons have placed great reliance upon certain so-called distinctive features of the flow as it is seen in the early stage of cancer. It seems, however, to be an ordinary cervical leucorrhea, the amount of which has been increased by the irritated and overactive cervical glands. I do not think there is anything characteristic about it as an index of the disease in its curable and incipient stage.

Pain, as one of the criteria of early cervical carcinoma, has little or no value. The cervix, as we all know, is comparatively insensitive, and, until the disease has invaded contiguous structures, practically no suffering is, as a rule, complained of. Such invasion having taken place, the location, character and intensity of pain will be determined by the particular structures directly affected or pressed upon by the cancerous growth. Favorite seats of referred or reflected pain are the sacral region of the back, the ovaries, the rectum and the thighs.

The symptoms which I have enumerated are those which are most common in cancer cases, but, as I have said, none of them is in any way characteristic or pathognomonic of the disease. If so, no examination would be necessary. It is, therefore, worthy of repetition that, in women of the so-called cancer age, no indication, however slight, of the possible existence of cancer, should be lightly regarded. Expectancy and therapeutic nihilism find here no possible justification. Duty demands action, and the proper action should be a thorough physical examination, followed, if necessary, by a prompt resort to the microscope.

The physical signs elicited by such examination are of great value. They will depend, of course, upon the location of the epithelial cells in which the disease originates and the direction in which it grows. Cancer of the vaginal portion—the squamous-cell carcinoma—frequently begins upon the site of an inflammatory erosion which has followed an old cervical tear. The beginning of the transition from the benign to the malignant can not be demonstrated except with the aid of the microscope. A little later, when disintegration of tissue has begun or the cancer has assumed the so-called vegetating or papillary form, the resulting ulcer or the polypoid mass does become demonstrable by the unaided senses. Before this has occurred, however, it is to be noted that the suspected area bleeds more easily upon being touched than does the simple inflammatory area, and may be noticeably elevated above the surrounding tissue. Careful palpation of its margins may also disclose an indurated edge, while the submucous portion of the cervix is peculiarly dense and hard. When a decided ulcer is found, these characteristics are of course much more marked. The very presence of such an ulcer, or indeed of any ulcer, is strongly indicative of malignancy, since we know that benign ulcer of the cervix is extremely rare. The polypoid masses to which I have referred may be found as wart-like growths or eminences which are peculiar in their friability and the readiness with which they bleed upon even the gentlest manipulation.

The most insidious form of cervical cancer is that in which the disease begins in the cylindrical epithelium of the cervical canal. Fortunately, this is relatively uncommon, for in it extensive destruction of tissue may take place without any evidence upon the exposed surfaces. Of course, where there has been a bilateral tear with eversion of the mucosa, this form is more quickly recognized.

Beginning in the mucous membrane of the cervical glands, cancer very commonly appears in the form of nodules in the substance of the cervix. These require to be differentiated from the so-called Nabothian cysts which are so frequently seen in connection with lacerations and are referred to as cystic degeneration of the cervix. The exclusion of such cysts is easy, both by their appearance when they project beyond the surface, and by the simple expedient of puncturing them, when the characteristic mucilaginous con-

tents will become evident. An interesting point in connection with these cancerous nodules is that the mucous membrane which overlies them is not alone congested, but upon palpation it seems glued to the structures beneath and does not glide readily over them, as in the normal and in benign conditions. This is an extremely suggestive sign and is, I take it, analagous to the retraction and dimpling of the skin which furnish so valuable a diagnostic guide in cases of cancer of the breast.

In all forms of cervical cancer, there is a general induration of the tissue, the normal resiliency and elasticity of which are practically lost. This gives not only a useful palpatory sign, but it is peculiarly noticeable when an attempt is made at dilatation, which demonstrates its firmness and incompressibility in a striking manner. Some surgeons have tried to make use of this peculiar attribute of cancerous infiltration for purposes of early diagnosis, and especially as a means of differentiating between the results of inflammatory and malignant disease—the inflammatory cervix yielding to the dilator and becoming softened under the influence of continuous pressure. The slow method of dilatation (as by the use of tents) seems better adapted to this purpose than the rapid divulsion with metallic instruments. The use of sulphate of copper was thought by Heitzmann to be a reliable and unfailing aid in the recognition of the incipient ulcerative form of cancer of the cervix. He applied a 10 per cent. solution of this drug to the suspected area, producing hemorrhage in beginning cancerous ulceration, and a bluish-white coating without hemorrhage in cases of simple or inflammatory erosion.

The best evidence that there is no absolutely certain method of diagnosing cancer in its earliest stages, except by the use of the microscope, is afforded by the efforts which have been and are now being made to find some change in the human organism which can be said to be peculiar to the disease. These investigations have been conducted chiefly in the fields of chemical and serological research. Perhaps the most promising serum-test is that of Abderhalden, concerning whom and whose work in the sero-diagnosis of other conditions much has been said and written in recent months. His test has for its basis the premise that when foreign proteins gain access to the circulation, the organism reacts by elaborating a ferment which causes their disintegration or digestion. The same reaction is thought to take place when certain peculiar proteins are derived from the body itself—by autogenesis, so to speak. Elements from the placenta, for example, pass into the maternal blood, and the serum has been shown to be able to digest placental tissue. This change, it is believed, occurs only in pregnancy, and therefore the test for pregnancy is based upon this principle. It has been assumed that in cancer analagous reactions occur, and the experimental digestion of cancerous tissue by the serum of suspected patients, who later have shown unmistakable evidences of cancer, has given much encouragement to those who would attack the disease in its real incipiency.

To discuss the early diagnosis of cancer naturally leads one to consider the various measures which have been proposed for the purpose of restricting or preventing it, as far as possible. Much has been said of late regarding these phases of a great and pressing problem, and I trust I may be pardoned for making reference to them before I close. For the general educational campaign now being waged under the auspices of a number of State and National organizations, both lay and professional, I have only words of commendation. The instruction of the public as to the possible significance of the much neglected early signs of cancer is unquestionably a step in the right direction, but unfortunately the very classes of society in which cancer is most frequently to be found can not be reached by newspapers, magazines or public lectures. I believe that the general practitioners of medicine constitute the most important agency in the instruction of the public, and if all of them would take advantage of the many opportunities which come to them to explain the possible meaning of hemorrhage, discharge and pain, at or near the time of

the menopause, not only would a decided improvement in the mortality statistics of cancer be effected, but much of the onus and blame which come to them in cases of fatal procrastination would be avoided.

Going further with the duties and responsibilities of physicians, I beg to quote from statements made by Dr Howard A. Kelly and Dr. William Easterly Ashton, because they so well express the opinions which I have long held, and to which I have frequently given expression. Dr. Kelly, in his Medical Gynecology, published in 1908, has this to say: "In from six to eight weeks after every confinement the medical attendant should see his patient, with the object of making a careful inspection and of noting in his casebook the extent of the traumatism caused by the labor and just what lesions remain. Every woman who has borne children should be examined by a competent physician at least once every year until she is fifty-five years old: The effect of an adoption of these rules would be prompt discovery of an enormous number of cancer cases in their very incipiency. That such a course would be distasteful to to women at large, I do not doubt, but who would measure such a trifling sacrifice against the great gain of even a small increase in the percentage operability of this distressing and today largely hopeless class of cases?"

Dr. Ashton, writing in August, 1912, expresses still more pertinent and definite views in the following words: "While nothing is known of the cause of cancer. yet it is a clinical fact that the disease occurs almost exclusively in women who have borne several children, and consequently, so far as our present knowledge serves us, it is important that lacerations of the cervix should be viewed in the light of a dangerous predisposing cause. As a prophylactic measure, therefore, all such traumatisms should be repaired. This is especially true of lacerations which are associated with eversion of the mucous membrane of the cervical canal, cystic degeneration, erosion and hyperplasia of the tissues of the cervix. The obstetrician before discharging a patient after confinement should examine the cervix, and if a laceration is found to be present, it should be repaired within three or four months. It should also be the duty of the general practitioner to examine the cervix of all women who consult him for pelvic symptoms and urge a repair operation if a laceration is found. And finally, I would urge, as a routine practice, the examination of every woman over forty years of age who has borne children and the immediate repair of all lacerations of the cervix that may be discovered. The prophylactic treatment of cancer of the cervix, in my judgment, is most important, and I am convinced that the frequency of the disease could be materially lessened if the general practitioner would educate his patients to appreciate the necessity for repairing cervical tears."

Significant and suggestive as are such statements when made by men of wide experience and acknowledged ability, skill and judgment, I feel that I am fortunate in being able to give them additional value by referring to the work of another surgeon who has recently spoken, not of what *should* be done but of what *has* been done by him along the lines indicated in the above quotations. Dr. L. M. Bossi, in the Zentralblatt für Gynäkologie, of July 5th, 1913, says: "The purpose of so-called prophylaxis seems to have been early diagnosis with the object of timely hysterectomy. This is surgical therapy, not prophylaxis. The aim of gynecologists should be to find the means to prevent the development of uterine cancer. Is this possible? Twenty-seven years of clinical experience sustains an affirmative reply. Remove the predisposing chronic lesions from the cervix and cure by the curette or otherwise the hyperplastic formations of the corporeal mucous membrane. In my experience with 7,000 cases in which I have performed plastic operations on the portio vaginalis, I could in none of them even after many years establish the development of cancer, where it is concededly most frequent. I am sure that, in most cases, the origin of cancer is to be found in chronic lesions and inflammations (endometritis, endocervicitis, etc.), which have been treated in the usual dilatory way and es-

pecially with chemical caustics, whose misuse creates serious disturbances in the tissues. The assertion that cancer has its origin in injuries or lesions, themselves benign, which are not treated in time or in a proper manner, therefore follows. A really humanitarian and clinically scientific work would be a propaganda for the prophylaxis of cancer of the uterus, the basis of which should be timely, systematic and persevering surgical treatment of benign affections of the cervix and uterine cavity."

In the preparation of a suitable address for this occasion, I have encountered many difficulties and frequent interruptions. Such as it is, however, I offer it to you with my best wishes for the success and permanency of the Franklin Square Hospital Medical Association. I now have certain more or less clearly defined opinions with regard to the cancer problem which I beg to submit to you in closing. I should be glad indeed, if, by some happy thought or useful suggestion, I could aid, in an appreciable degree, in the warfare against what has been fitly characterized as a national peril.

In my judgment, the Franklin Square and every other public general hospital in this city and elsewhere should maintain a well-equipped and properly conducted department of surgical pathology, open to all reputable physicians, who should be encouraged to send specimens for examination and especially scrapings and sections from cases in which cancer is suspected. I would carry the laboratory idea further, because, for economic if for no other reasons, the organized governments of the State and city, in their respective health divisions, should also provide facilities, likewise available to all licensed practitioners of medicine, for a prompt and authoritative report upon cases of suspected cancer, as they now do so effectively in cases of tuberculosis, typhoid fever, diphtheria and other less serious ailments. Why, for example, should not the functions and duties of the State bacteriologist or pathologist include reports upon suspected cases of malignancy, especially among the poor? Moreover, it occurs to me that the medical schools, in arranging their curricula, might with advantage give greater prominence to the most advanced methods for the early recognition of tuberculosis and cancer, and that State licensing boards, against whose unpractical examinations much deserved criticism has been directed, should also place more emphasis upon these vital subjects and give greater relative credit to those who show a familiarity with them. What a stimulus this would be to the undergraduate who is preparing to "run the gauntlet" of the examining board and, at the same time, endeavor to equip himself for the imminent and important problems with which he is sure to be confronted, even in the beginning of a medical career!

And finally, I desire to state in the most deliberate manner that, in my opinion, humanitarians, philanthropists, social workers and legislative bodies, with money at their command to spend or to appropriate for useful purposes, would do well to divert their attention for a while from public libraries, free drug dispensaries, spasmodic and abortive vice crusades, experimental radium institutes, societies for the promotion of the welfare of lower animals, and other more or less commendable, if not always utilitarian projects, and focus it upon the poverty-burdened women of the country who are sadly in need of public maternities, where the most important function of their lives could be safeguarded and conducted with proper care, supervision and environment, in which or from which the subsequent physical welfare of mothers could receive systematic and capable attention, and under the auspices of which the *real* prophylaxis of cancer could be effectively practiced. The establishment and maintenance of nurseries for the care of the children of the poor during the lying-in period would of course be a logical and natural accessory to such institutions, and would do much to promote and facilitate their general use.

CHRONIC AND RECURRENT DISEASES OF THE SKIN IN RELATION TO THE HEART AND CIRCULATION.*

By DAVID WALSH, M. D. Edin., Senior Physician, Western Skin Hospital, London, England.

The following article details the results of investigations into a number of chronic and recurrent skin diseases in relation to lesions of the heart together with a few acute conditions having a similar relationship. The term "chronic" is applied to anything which has lasted, say, from a month or so upwards—in one instance an extensive dermatitis of the leg had persisted for thirty years. The term "recurrent" is applied to those maladies of the skin which have occurred, sometimes with seasonal regularity, sometimes after attacks of acute intercurrent illness, at other times without obvious cause. A broad exception must be made as regards chronic and recurrent disease, namely, that large group due to obvious resistent infection, such as that of scabies, ringworm, tuberculosis and syphilis, but even in those affections the course may be much modified by the state of the central circulation. As to the cardiac defect only those murmurs have been included which could readily be recognized as organic; or conditions in which myocardial weakness could be reasonably inferred from the feebleness of the pulse, the weakness of the heart's sounds, and such other evidence as a history of recent influenza, anemia, or other marked disturbance of the general health.

Among the problems presented by the study of diseases of the skin, those of chronicity and recurrence are not less interesting than obscure. Every dermatologist must have asked himself why one patient recovers rapidly and permanently from an acute dermatitis, while another, under apparently similar conditions, drifts into a chronic affection which may persist for months or years, or which, if relieved for the time being, may return again and possibly through the remainder of a long life-time. My attention has been drawn to this point, and I have made a number of observations which lead to the conclusion that in many instances both chronicity and recurrence are closely related to valvular disease or some other gross abnormality of the heart. If my observations be correct the circulatory defect may be associated with skin lesions of widely differing kinds, such as the eczematous, acneiform, rosaceous, and various forms of obstinate, dry, scaly, spreading and thickened or atrophic dermatitis. These eruptions appear to be modified or determined as to onset, duration and recurrence by the circulatory defect. I regard them broadly as due to a lowered resistance on the part of the skin to traumatism, both primary and secondary, in consequence of which the power of normal recovery from injury is replaced by a more or less prolonged pathological reaction.

There are obvious ways in which circulatory disturbances may affect the skin. The blood-supply, for instance, may be altered as regards either quantitiy or quality. Its quality is altered in the various anemias and toxemias, in the invasions of various micro-organisms, in the reduction of opsonic activity, and so on. A good instance of qualitative cause and effect may be found in antipyrin rash. A patient takes a so-called "headache powder" containing antipyrin and within a few hours develops an eruption due to the absorption into the blood of an irritant drug from the alimentary canal. At the same time it must be assumed that there is some individual peculiarity of the patient concerned in the resulting dermatitis. In other words, there is something more than the mere presence of antipyrin in the blood to cause an eruption. Otherwise, antipyrin rash would be much more common than it is, for the drug is sold freely to the public in scores of nostrums for the

*Reprinted by request.

cure of headache, insomnia and children's complaint.

Although it would be impossible to discuss adequately the relation of symptomatic circulatory affections of the skin apart from qualitative changes, it is nevertheless evident that the effect of the latter must to a great extent depend on the amount of blood actually brought to the surface capillaries. A blood stream of good quality, for instance, must be robbed of much of its potential nutritive, opsonic, bactericidal and excretory value if presented to that important organ in quantity insufficient for the full exercise of its functions. Inadequacy of this kind, indeed, seems to offer a key to various otherwise obscure problems in dermatology. The present purpose is to discuss more particularly some aspects of quantitative blood changes, that is, changes in the volume of circulatory supply in relation to diseases of the skin.

As an instance of a healthy skin in which the arterial, the capillary and the venous circulations are in a state of healthy balance, let us take a young college athlete in good training. We find his cutaneous circulation adapting itself to rapidly alternating external and internal influences, and, what is still more important, possessing the power of rapid recovery from moderate traumatism of various kinds. His skin is freely exposed day after day to damage by rain, wind, snow, sun and other vicissitudes that are part and parcel of his athletic environment. After a cold bath or a long swim a rough towel soon restores the normal balance of the surface circulation. So perfect, indeed, are his circulatory adjustments that he can sit in wet clothes and allow them to dry upon him with impunity. After many hours' exposure to a hot July sun, as in a cricket match or a boat race, his skin gives him no trouble either at the time or afterwards. Yet a similar exposure may be attended with far different results in later life, when we may assume the circulatory balance is less elastic. A case of this came under my notice some years ago.

Case 1.—A. B., a gentleman of middle age, who had been in his youth a well-known football player and athlete, presented himself with the nape of his neck in a state of violent sun dermatitis, red, swollen, tender and desquamating. He had gone on a recent holiday to the Scilly Islands, where he spent part of the time in an open boat. Under treatment he speedily recovered from the attack.

In youth this patient had been exposed numberless times in an open boat without experiencing any bad results, but now a similar exposure was attended by violent pathological reaction. To what altered conditions of the individual could this difference be attributed? So far as could be detected there was no serious heart trouble, if we accept what is, I believe, usually described as an "athlete's heart," a condition of left-sided muscular hypertrophy without valvular murmurs, the pulse being moderate in strength and the arteries healthy. On the other hand, he had suffered from repeated recent attacks of influenza, and was engaged in sedentary professional work. His dermatitis was on the whole regarded as due to circulatory inadequacy, which in turn resulted from the combined influences of advancing years, the cessation of active habits and post-influenzal heart changes. The dominating pathological feature in the skin was, in my opinion, the lessened power of healthy reaction to external traumatism, arising from circulatory inadequacy—a state of affairs that would be commonly spoken of as "lowered bodily resistance." It is not suggested that the abnormal circulation accounted for all the phenomena of the attack. As already pointed out, the quality of the blood has to be considered, and some abnormal blood state of gouty, dietetic or other origin, may have contributed materially to the initial dermatitis.

The same patient has since suffered from several other attacks of sun dermatitis, although of a fleeting and less severe nature. On each occasion it was possible to trace a predisposing influence in the shape of mental worry, overwork, influenza or some other more or less obvious depressing cardiac influence. The original attack took place at Easter, a period of the year constantly associated with re-

current eruptions. It is interesting to note that on one occasion, the sun dermatitis was attended with head symptoms, and he was laid up in bed for ten days. This looks as if the circulatory inadequacy had delayed the power of healthy reaction against traumatism in an internal organ as well as in the skin.

A more extended examination of the heart in connection with the skin led to various interesting observations. One of the earliest cases was the following:

Case 2.—A. H., a lad of 17 years, had suffered from "bad legs" for the past eight or nine months. The starting point was what he termed a "scrage" of both shins from slipping between the legs of his office stool. The injury was so slight that his medical attendant predicted recovery within a month. The lad looked well and felt well. His family history was good. Locally, the front of his legs was practically covered with a chronic, thickened, dusky and somewhat scaly spreading dermatitis. There were a few islands of healthy skin in the center of the rounded coalescing patches, and there were spattered outlying satellites, some extending up the thigh. The appearance suggested a chronic, spreading dermatitis of lichen planus type.

The question naturally arose, why should this apparently healthy lad not have recovered from so simple an injury as a graze on the shins, an accident that usually mends itself within ten days or a fortnight, with little or no treatment? To say that the delay was due to enfeebled bodily resistance would be to describe rather than to explain. Noticing that the lad's hands were dusky I examined his heart and found a marked thrill and localized murmur connected with the first mitral sound. It seemed to me reasonable to surmise that the secondary traumatic changes might be connected with the mitral obstruction. Assuming any material alteration in the cutaneous circulation, it follows that the processes of chemotaxis, phagocytosis and other tissue methods of fighting bacterial invasion would be correspondingly impaired. Hence the spreading dermatitis of the boy's legs, due to the unchecked or partially checked growth of pathogenic organisms.

Case 3.—Not long afterwards I saw in the country an elderly gentleman who also suffered from a chronic dermatitis of both legs, due to a graze of the shins by a railway truck seven months previously. His left leg showed a small patch of chronic dermatitis, and his right an erythematous scar with a scab that persisted seven months after the accident. The left tibia was thickened and there was a history of chronic periostitis of that bone following an injury some years before. The heart showed valvular disease with multiple murmurs. During the previous four or five years there had been several severe illnesses due to failure of compensation, but the skin showed no marked signs of senile atrophy. This case appeared to show, as in Case 1, that a lessened resistance to traumatic processes may be manifested in deep as well as in surface tissues in a patient suffering from serious circulatory disorder. In the skin the tardy and complicated recovery was visible to the eye, while in the bone it was recorded permanently in the thickened and irregular tibia.

Further investigation of cutaneous condition arising from injury soon made it evident that valvular disease existed in many patients in whom there was nothing to suggest the desirability of examining the heart. Further, in the majority of patients suffering from chronic or recurrent diseases of the skin valvular murmurs were found to be present.

Case 4.—T. H., m. æt. 58; Brewer's traveler. Has an intensely irritating patchy dermatitis of both legs, of lichen planus type. The patches are shiny, bluish, somewhat hypertrophic and scaly, and in places show a linear arrangement. The attack began ten years ago with an injury to the right shin. The rash which followed cleared up under treatment except over the site of the original injury, but recently it has recurred in both legs. At the back of the left lower leg is a hypertrophic patch, which, according to the patient's statement, varies in appearance from time to time. On one occasion it was seen to be much swollen. He is

a big, powerful man, and looks strong and healthy. His heart, however, shows a localized murmur connected with the first sound, in the mitral area, with cardiac dulness half an inch to the left of the nipple line. The pulse is 96, regular and of good strength. There is no shortness of breath, but occasional palpitation if excited; arteries thick for age.

Case 5.—W. M., m., age 60; carpenter. Right leg and foot deep red, scaly, discharging fluid; both legs edematous. Began as injury to right leg by a spike, half an inch deep, many years previously. Disease of aortic and mitral valves; cardiac dulness two fingers outside nipple line; eyes swollen; face puffy; hands dusky.

Case 6.—H. S., m., age 27; bank clerk. Right leg affected with rash of two or three years' duration. Began as a spot and now involves nearly the whole leg from ankle to knee, except some small islands at the back. The eruption is dusky, somewhat raised, and irritates occasionally at night. Family history good. Patient has enjoyed good health; had scarlet fever at 9 years. No dyspnea, palpitation, now swelling of feet. Some indigestion the last few years. Has aortic obstruction. Eruption cleared up completely under treatment with local antiseptics and heart tonics.

Case 7.—A. B., f., age 50; cook. Came to hospital in May, 1908, with an eruption on hands, first attack. Family and personal history good; had enteric fever as a child. Hands got well under treatment, but in February, 1909, there was a relapse, which lasted nearly a year. There was no palpitation, shortness of breath, dyspepsia, nor swelling of the ankles—nothing, in short, to suggest heart trouble. Examination, however, revealed a systolic mitral murmur, with cardiac dulness one inch outside the nipple line. The arteries were good for age. The only cause that could be suggested for the rash was some failure of cardiac compensation which suspended the ordinary or normal process of recovery from the traumatism of the kitchen fire.

Case 9.—H. S., f. age 48, married. Complains of large red patches that come out on face on exposure to heat, as in cooking, or in a hot room. This has gone on for the last few years and came out lately, even in cold weather. She has used yellow soap for the face until a few weeks since. Has had rheumatic fever twice and has a mitral systolic murmur audible at the angle of left scapula. The case was diagnosed as one of chronic erythema of urticarial type in a cardiac subject.

We may next take cases of sun dermatitis in patients with cardiac lesions:

Case 10.—P. McL., m., age 21; clerk. Came to hospital with chronic irritating rash on face and hands, less marked in winter. Ten years ago was treated by the late Dr. Radcliffe Crocker for "quiet prurigo." The rash at present is chiefly vesicular and confined to the hands; patient is attacked directly he goes into the sun. Family history good. Patient was delicate until nine years of age, and has always suffered from constipation. The cardiac dulness is in the nipple line and there is a systolic mitral murmur audible at the angle of the left scapula.

Case 11.—S. E., f., age 36, married, no children. Came to hospital suffering from sun erythema of hands and face. First attack six years ago; recurrence every year since. Pulse extremely feeble; slight edema of ankles; history of dyspepsia; palpitation if excited; there is a mitral systolic murmur.

Soap is a common irritant, especially in the form used largely for scouring purposes. As many persons use these irritant soaps, and but few experience any bad results there must presumably be some predisposing condition in those attacked. The following cases suggest that the explanation may sometimes be found in the want of normal balance of the cutaneous circulation connected with heart disease.

Case 12.—A. McD., f., age 35; home. Has a diffuse dry superficial dermatitis on side of face. She has had rheumatic fever, is tremulous, and suffers from headaches. Passes a large amount of urine, Sp. Gr. 1017, with trace of albumin. Bowels regular, but suffers at times from dyspepsia. There is a presystolic thrill and murmur.

Case 13.—A. B., m., 47; road-sweeper. Severe rosacea of face of seven months' duration. Face covered with scarlet patches; rough thickened areas on forehead, nose and cheeks, the whole dotted with papules and pustules. He has slight double congenital ptosis of eyelids. Is much exposed to weather, and uses yellow soap freely for washing his face. His feet do not swell, nor does he complain of dyspepsia, shortness of breath or palpitation. Pulse 80, compressible, arteries thick for age. There is a mitral systolic murmur conducted into axilla.

Case 14.—L. P., f., age 37; home. Diffuse papuloerythematous rash on hands and arms, with some desquamating patches on palms. No swelling of feet, no palpitation, but dyspnea on exertion and some dyspepsia. Pulse 80, compressible; arteries thick for age. Heart dulness one inch to left of mid-clavicular line. An aortic systolic murmur is present, and a mitral systolic murmur conducted into axilla. A diagnosis was made of soap dermatitis in a cardiac subject.

Case 15.—L. D., f., age 35; married. Papuloerythematous rash of the face; scalp markedly seborrheic. Patient in the habit of washing her face with a carbolic acid soap. Came to hospital in September, 1908, when the rash was diagnosed as a soap dermatitis. She improved greatly under treatment, but returned in March, 1910, with a papular rosacea of face and neck. She was then found to have palpitation; a small irregular pulse; heart dulness extending an inch outside the mid-clavicular line; a systolic aortic murmur conducted up the carotids, and a mitral systolic murmur audible at the angle of the scapula.

Case 16.—M. A. W., f., age 57; widow. Has an irritant dermatitis, dry, thickened and cracked, on balls of thumbs, of three months' duration. Uses a good deal of scouring soap and soda. Mother died at 40 from heart affection, and father at 50 from consumption and heart disease. Patient has been for five years attending hospital on account of heart trouble. Has a mitral systolic murmur audible an angle of scapula.

Case 17.—L. H., f., age 48; widow. Irritating rash of right wrist, several months' duration; uses Sunlight soap. Had rheumatic fever some years ago, and five months since had an internal tumor removed. Has a mitral systolic murmur conducted into axilla.

Case 18.—A. E., f., age 38, married; green-grocer's assistant. Has a papular rosacea of 18 months' duration, attributed to use of yellow soap and exposure to weather. General health good to within the last few years. Two years ago had influenza; has had rheumatic pains in knees for last six months. One sister had rheumatic fever. Heart shows marked pre-systolic thrill and systolic mitral murmur conducted into axilla. Cardiac dulness to mid-clavicular line. Pulse 100, small and variable.

Case 19.—G. H., m., age 39; carman. Marked rosacea of face, of thickened papulo-erythematous stage. Recurs every summer, and gets nearly well in winter, but the ears remain rough and scalp. Personal and family history good. There is not valvular murmur, but the pulse is 120, compressible and variable. He sleeps well; is nervous; sight is good. Smokes two ounces of navy-cut tobacco every three days. This was regarded as a case of pathological reaction to the traumatism of soap and sun, owing to the circulatory inadequacy arising from a "tobacco heart."

Connected with various irritants are the following:

Case 20.—L. P., f., age 22; waitress. Chronic erythematous patches about hands. Uses metal polish. Ankles swell at times. Has a mitral systolic murmur conducted into axilla.

Case 21.—J. S., m., age 43; optician. Acute eczema of both hands of a fortnight's duration. Treated five years ago for a similar condition. Works in water all day long polishing lenses. Good personal and family history. No dyspnea; some dyspepsia and palpitation of late. Heart shows presystolic thrill and systolic mitral murmur conducted into axilla; dulness half an inch outside of nipple line. Pulse 100, good strength; arteries thick for age.

Case 22.—Z. K., f., 32; housemaid.

Patches of eczema, wrists and hands, on and off eight years; last attack lasted twelve months. Family history of rheumatic fever. Gets bilious attacks and is then yellowish. Feet swelled eight years ago. Has a marked presystolic thrill and a mitral systolic murmur conducted into axilla. Uses much soda in housework.

Case 23.—M. D., f., 28; home. Irritating rash of face and hands, began on face about ten weeks ago. There are some exudative erythematous patches on face and backs of hands (with interdigital scabies burrows). Patient is in poor health and has rheumatic pains. Mother had rheumatic fever. There is a presystolic thrill and murmur.

Case 24.—M. D., m., 30; machinist. Red nose and red and scaly patches on cheeks. We treated for similar complaint four years ago. History of "blooding poisoning" twelve years ago; pleurisy three years since. Feet swell, suffers from dyspepsia and constipation. There is mitral disease and seborrhea of scalp. (This case suggests that the generalization of seborrhea may be sometimes due to a lowered resistance to bacterial traumatism as a result of some central circulatory defect. I have noted various cases of alopecia and of acute and chronic seborrheic dermatitis in connection with valvular disease.)

Case 25.—C. B., m., 65; clerk. Papular rosaceous rash on face and scaly eruption on forehead, cheeks, limbs and body. The trouble began on scalp four years ago. Uses Primrose soap for face. There is much dandruff and hair is falling freely. There is a loud aortic systolic murmur heard down sternum and a soft systolic mitral murmur. Heart dulness well to left of nipple line; pulse irregular. Urine: Sp. Gr. 1015; no albumin.

Case 26.—D. Q., m., 65; clerk. Hair falling three months, after attack of influenza. Has suffered from headaches and insomnia; no history of syphilis. Personal history good. Father died of phthisis at 50. Has valvular disease of the heart (notes do not state precise cardiac condition).

Case 27.—C. J., f., 32; teacher. Two years ago hair turned gray, became brittle and fell freely. Had gastritis five and influenza two years back. Mother and father have both had rheumatic fever. Has a seborrheic scalp. Heart shows a mitral systolic murmur conducted into axilla.

Case 28.—M. S., f., 26, s.; no occupation. Has a rash of thirteen or fourteen years' duration, consisting of rounded scaly papules from the size of a pin-point to that of a shilling on limbs and trunk, running into patches at elbows and knees, sometimes irritating. There are some red papules on face and eyebrows, and a diffuse red area in the whisker region. Began on scalp between thirteen and fourteen years ago. Scalp is scaly and hair falls a good deal. Father had a similar rash and had rheumatic fever two years ago. Patient had St. Vitus dance at 10 and pneumonia at about 10. There is a marked presystolic thrill and a loud mitral systolic murmur audible at the angle of the scapula. Pulse 100, regular, compressible; arteries thick.

Case 29.—F. J., f., 18 s.; milliner. Has a chronic scaly seborrheic rash of psoriasis type on legs, arms, body, etc., of seven years' duration. Mother had rheumatic fever and suffers from heart. Patient has palpitation at times, and there is a soft systolic mitral murmur audible at the angle of the scapula. After a holiday at Harrogate the heart condition improved and the rash nearly disappeared. Later the rash has recurred, and persists as a chronic condition.

Case 30.—E. M., f., 19, s.; laundress. Since age of 14 years has had spattered red spots on the backs of hands and scaly patches about elbows and knees. The rash has never disappeared since its onset five years previously. The pulse is 100, variable. Patient has red cheeks; no dyspepsia or dyspnea. There are mitral and aortic murmurs.

Case 31.—S. S., f., 45, m.; home. Has patches and sheets of scaly rash on buttocks, arms, knees and body. First attack at 16 years. The right leg has not been free for thirty years. An uncle died of phthisis. Father died at 54 from ulcer of the stomach. Patient has had infantile palsy of the left leg. There is a systolic

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mitral murmur. Pulse 88. Urine: Sp. Gr. 1010; large amount; no albumin.

Case 32.—A. L., f., 53, m.; home. Chronic irritating eruption of hands and feet. There is a large papular patch on dorsum of foot and papuloerythematous patches on the legs; also a chronic papular rash on the hands. Grandfather had rheumatic fever. Patient has had good health until the past few years; feet swell at times; has suffered occasionally from indigestion; been treated at a general hospital for heart weakness. There is a systolic mitral murmur. The eruption disappeared under treatment, but recurred a year later.

Case 33.—E. S., f., 58, married. Irritating rash of both legs, twelve months' duration. The legs show punctate red spots around the hairs, with some diffuse dry scaly red patches. The patient is weak and emaciated, and suffers a good deal from palpitation, which sometimes keeps her awake at night. Suffers from "liver." Has a systolic murmur conducted into axilla.

The next case is one of chronic papular erythema.

Case 34.—E. G., f., 57, married. Right leg has patches of pale papules, slightly irritating at times, and in some places coalescing; condition began as a few small spots and has lasted a "long time." Has suffered a good deal from rheumatism, with an occasional rash on forehead. Suffers from palpitation and shortness of breath. Heart: mitral systolic murmur.

Case 35.—B. R., f., 27, single; teacher. Crops of boils and carbuncles last eighteen months. Urine: Sp. Gr. 1010; no sugar; no albumin; large in amount. Heart irregular in action; history of fainting fits; aortic systolic murmur; feet swell a little now and then; no dyspneas.

The next case is one of an extremely superficial form of lupus erythematosus:

Case 36.—A. W., f., 29, single; teacher. For several months has had non-irritating erythematous patches on cheeks with some extremely faint superficial scarring. There is a family history of rheumatic fever and heart disease. The general health has been good until lately. There is a presystolic thrill and murmur. The case suggests a failure of circulation predisposing to an erythematous invasion.

We next come to a group of cases in which there is an extremely chronic superficial progressive desquamation of the fingers, spreading steadily from the point of origin, which is in some instances clearly traumatic. This form of dermatosis is rebellious to treatment, in spite of its superficial nature. In the four following cases it was associated with valvular murmur, but in another case it was not thus associated.

Case 38.—A. H. M., m., 46; time-keeper. Superficial dermatosis on third finger, left hand; four months' duration. Good personal history. Cardiac dulness one inch to left of nipple line; systolic mitral murmur.

Case 39.—A. H., m., 46, S. W., f., 30, s.; home. Superficial chronic dermatosis third left forefinger sixteen years' duration; never quite gone away. Mother and sister had rheumatic fever. Systolic mitral murmur audible at angle of scapula.

Cases of skin affection associated with serious heart trouble might readily be multiplied. The foregoing have been selected from many others. Where there has been any doubt in my own mind as to the existence of an organic murmur the case has been rejected. In my experience, so far as it extends, the association occurs in a large proportion of chronic and recurrent cases. Without having any exact figures I should be inclined to estimate the proportion—excluding a group of obvious parasitic origin—at from 80 to 90 per cent.

A few cases have been kindly placed at my disposal by Dr. Norman Meachen.

Case 40.—A. M., m., 25; hair-dresser. (Cardiac condition fully described by Dr. Halls Dally.) Patient suffering from a severe chronic, scar-leaving acne vulgaris; for twelve years had complained of shortness of breath and pain in region of heart. Left side of heart moderately hypertrophied, the right dilated, showing considerable pulsation on radiographic investigation. There were pulmonary and tricuspid murmurs. Dr. Halls Dally regards the case as one of pulmonary stenosis, almost certainly congenital. It is worthy

of note that in this case vaccine treatment had failed, a fact that agrees with my own experience in cardiac cases.

Dr. Halls Dally has kindly sent me notes of four other cases:

Case 41.—T. G., m., 45. Double aortic murmur and alopecia areata.

Case 42.—G. F., f., 24; clerk. Mitral regurgitation and stenosis; early Raynaud's disease.

Case 43.—R. C., f., 16; sempstress. Mitral regurgitation; ichthyosis and keratosis pilaris.

Case 44.—W. E., m., 55; traveler. Myocardial degeneration. Chronic palmar eruption, eczema, left hand (syphilis excluded).

From Dr. Meachen's clinic at Blackfriars I have taken the following chronic and recurrent cases without any attempt at selection. Almost every such case showed organic heart disease.

Case 45.—T. S., f., 26; packer. Family history of rheumatic fever. Seborrhea of scalp and chronic scaly patches over outer left malleolus, seven months' duration. There is mitral regurgitation and feeble pulse.

Case 46.—L. B., f., 19, s.; collar-stamper. Psoriasiform rash on lower extremities from buttocks downwards; nine years' duration; never gone away. Father has asthma and heart disease. Systolic mitral murmur conducted into axilla.

Case 47.—L. C., m., 47; porter. Patch of chronic eczema, right leg; eight years' duration. Loud aortic systolic murmur. Pulse 100, compressible.

Case 49.—W. W., m., 30; laborer. Psoriasis sixteen years. No valvular murmurs, but weak action of heart; history of dyspnea and palpitation.

Case 50.—S. H., f., 76, widow. Eczema of leg at about site of a healed ulcer, following injury eighteen months ago. Aortic obstruction.

Case 51.—E. D., f., 46; home. Papular dermatosis of axilla, thigh, etc. Rheumatic fever sixteen years ago. Eruption thirteen years. Always uses Sunlight soap for skin; rest of family also use same soap, but have no rash. Mitral regurgitation.

Case 52.—F. W., f., 36; home. Psoriasis; First attack six years ago. Second attack eight months ago, after confinement. Mitral obstruction.

Case 53.—S. M., m., 58; laborer. Patches of thickened dermatosis of legs and arms, ten years' duration. No valvular murmur. No history of dyspnea or palpitation; a little dyspepsia; ankles edematous; pulse compressible.

Case 54.—M. B., f., 31; leather-machinist. Acute loss of hair last fortnight; nothing locally to account for the alopecia. Severe rheumatic attack at 8 and another at 18 years. Aortic and mitral disease.

Case 55.—L. B., f., 20; home. Psoriasis ten years. Mitral regurgitation. St. Vitus' dance at 11. Dyspnea and edema of ankles.

Among the conclusions drawn from this investigation the chief is that a certain proportion of chronic and recurrent skin diseases are associated with grave cardiac trouble. The heart lesion is for the most part valvular, and it appears to be inoperative so far as the skin is concerned while compensation of the heart muscle is fully maintained. Thus, a cook with valvular disease of the heart, recovers rapidly and physiologically from the traumatism of the kitchen fire so long as the heart muscle is able to maintain a healthy balance of the surface circulation. But let the cardiac muscle be weakened by an attack of influenza, a disease which we know is prone to affect the myocardium, and the cook forthwith develops an erythema of the face which will probably develop into more or less persistent rosacea. The central cardiac defect has been called into play by the post-influenzal changes in the heart muscle and has disturbed the balance of the cutaneous circulation, with the result that for the physiological reaction of the skin to the heat of the kitchen fire is substituted an abnormal or pathological reaction. The chronic erythematous condition thus brought about may, in my opinion, be regarded as a delicate clinical sign of heart disease. An extension of this principle of pathological reaction to traumatism may to a great extent account for the on-

set, the duration and the recurrence of many skin affections.

Cases of recurrent summer eruption the author has found almost invariably associated with valvular disease of the heart. Needless to say, the connection between heart troubles and disorders of the skin, if it be established, is likely to lead to considerable readjustment of our views upon the etiology, the diagnosis, the prognosis and the treatment of not a few cutaneous maladies.

The irritant may be manifold or multiple, and the heart lesion may be one of various kinds, that is to say, so far as my observations have extended. A great deal of work naturally remains to be done before any definite conclusions can be arrived at upon these points. Indeed, the present communication must be regarded as preliminary; it is presented to workers in dermatology as a suggestion of a promising field for future exploration.

As a result of these inquiries I have found a central circulatory defect in a large proportion of chronic skin affections of a dry, thickened and scaly type, such as those described under the name of psoriasis, seborrheic dermatitis, lichen planus, psoriasiform eruptions and the like. The substitution of a spreading chronic dermatosis in place of the normal healing process after injury described in several of my cases, I regard as a more delicate test of the cardiac inadequacy than the classical signs and symptoms, such as shortness of breath, palpitation, swelling of the feet, dyspepsia and so on, set forth in the textbooks. The question of the possible or probable methods by which pathological changes in the skin are influenced by circulatory disturbances cannot here be considered. It may be remarked generally, however, that it is clearly out of the question for a blood stream deficient in amount properly to discharge its functions of nutrition, of phagocytosis, of opsonic attack, in short, its various trophic and defensive duties. Abnormal capillary circulation whether in the direction of excess or of deficiency, probably explains why a given traumatic agent may be at one time effectual and at another ineffectual as regards one and the same individual; or, to put the matter in another way, why the result of a given traumatism—say that of the sun's rays—should be at one time transitory and fleeting while at another it sets up a dermatitis which may last for months or years, or which may recur at intervals during the rest of a long life-time.

Should the general law of the relation between central circulatory defects and the pathological reaction of the skin to traumatism be established it may afford a key to many obscure problems not only in dermatology but also in general medicine and pathology. Amongst them may be noted the following: It would, for instance, modify our attitude with regard to psoriasis. The cases above detailed appear to suggest a close connection between chronic psoriasiform disease and central cardiac defect. Most writers upon dermatology recognize the association of some systemic defect with psoriasis. In the majority of such cases investigation from that point of view I have found a circulatory flaw which I regard as probably an essential contributory condition. The characteristic sites of psoriasis are in parts where the circulation is limited, precisely where the effects of a weakened capillary circulation would be correspondingly emphasized. Personally, I incline the view held by Norman Walker and others that psoriasis is probably an extremely dry form of seborrhea; but I think it possible that in psoriasis the infection, whatever it may be, is brought to the skin by the circulation to which it has gained access, whereas in seborrheic dermatitis the infection has secured a foothold from the outside. In both psoriasis and chronic seborrheic dermatitis, according to my experience, it is the rule rather than the exception to find cardiac complication.

Disturbance of the surface circulation may also explain the irregular action of drugs upon the skin. Nothing is more certain in dermatology than the uncertainty of drugs which at times undoubtedly exert a beneficial action upon cutaneous maladies. It is clear that if we charge the blood with a remedy, say, with a vaccine, it cannot exercise its acquired thera-

peutic function upon the pathological skin unless presented locally in adequate amount, a consideration that may also explain why in so many instances the physician increases his doses. The success of Bier's hyperemic methods depends on the local determination of blood in full volume, and its curative effects are sought independently of internal or blood-borne remedies. The failure of Sir Almroth Wright's vaccine treatment in some cases and its conspicuous success in others may be explained by the adequacy or otherwise of the surface circulation. A reasonable explanation of failure would be found in a defective surface circulation which failed to bring the drug in sufficient quantity to the skin. This surmise is supported by the fact that in patients suffering from acne vulgaris and the complexion is often sallow, the circulation poor and the pulse feeble. The practical inference is that if we wish to secure the full local effect of internal remedies upon the skin, such as arsenic, mercury, the iodides, or various bacillary preparations, we must combine them with methods capable of flushing the skin with an adequate supply of blood. Acting on that principle I have for some time past paid special attention to the heart and circulatory system generally in patients suffering from chronic or recurrent skin maladies. Treatment has involved the use of various physical methods, such as the hot air, vapor and hot water bath, combined with rest, diet, massage, carefully regulated exercises, and internally, by the administration of heart tonics and other drugs aiming at the restoration of a healthy balance of the surface circulation.

Any dermatologist who wishes to test the trustworthiness of these observations has only to conduct a systematic investigation of the heart in all cases in his practice where the skin trouble has persisted, say, more than a month or two or in which there have been previous similar attacks. In order to simplify the test he may exclude cases of acne, syphilis, scabies and those of coarse fungus origin, although these, according to my experience, are often considerably modified as to severity, duration, curability and recurrence by the state of the cardiac circulation. In one obstinate case of lupus vulgaris of the cheek the disease recurred again and again after thorough operation in a girl suffering from valvular disease of the heart. The author is of opinion that a feeble surface circulation is likely to determine the development of lupus by its failure to hold in check the tubercular organisms which we may assume as a rule to be deposited locally by the blood stream. This in essence agrees with the same principle of lessened resistance to traumatism which is shown by cardiac patients as regards external irritants, such as sun, soap or pathogenic organisms.

Finally, in some instances chronic inflammatory conditions of deeper tissues have been noted in patients in whom cutaneous maladies are associated with heart trouble. May it not be that the pathological reaction visible to the eye was duplicated in the deeper tissues of the body? May not inadequacy of the surface circulation, capillary circulation, apply to deep organs as well as to the surface of the body, and thus afford a key to the onset, duration and recurrence of various organic troubles? The internal organs must be subjected to incessant traumatism of manifold kinds, such as that due to diet, alcohol, bacterial toxins and many other iritants. In the majority of instances we may perhaps be justified in assuming that recovery takes place and there is no permanent damage, just as happens in the case of the skin. At other times, however, if the injury be not fatal, the patient may drift into prolonged or permanent organic maladies. May not the difference between fleeting and chronic diseases of organs be more or less dependent on the soundness or otherwise of the central circulatory organ? The stomach, for instance, is often injured by irritants which give rise to pain, vomiting, dyspepsia and other symptoms of traumatism of that organ. As a rule the patient quickly recovers, but at other times the inflammation drifts into chronic gastritis, ulcer and even eventually into malignant disease. In ulcer of the stomach, which occurs in debilitated subjects,

may not the condition be due to a stomach wall which has lost its normal power of recovery from traumatism owing to inadequacy of the cardiac course, that the mere existence of a damaged valve renders all intercurrent traumatism necessarily grave or fatal. We know that a patient with organic heart disease sometimes recovers well from an acute malady, such as pneumonia, possibly because his compensation is good. Yet his outlook would be much less hopeful were the attack a complication of influenza or some other malady prone to weaken the myocardium.

The question of malignancy arises in relation to the disturbed balance of capillary circulation. Broadly speaking the cancerous period of life is associated with the diminution of the general capillary field and the lessening of the circulatory activity. In the skin troubles associated with heart disease we find marked features in vulnerability, persistence and recurrence, all of which are characteristic of malignancy. We know, also, that carcinoma is prone to develop on the site of chronic skin eruptions. On such grounds it would be interesting to investigate the condition of the circulation as a predisposing and contributory element in cancer.

The literature of the subject is scanty. Dr. George Dock (Nothnägel's Encyclopaedia, Vol. V, Diseases of Heart, English Edition, p. 516, 1902), says that "circulatory disturbances may exist in the skin even when there is no general venous congestion, and finally, the association of circulatory and respiratory anomalies is more apt to produce cyanosis than either respiratory or circulatory disturbance by itself." He adds that little is known about the arteries and veins in heart disease as regards the skin, and the inflammatory processes that sometimes take place in the edematous skin of late stages of cardiac disease.

Elsewhere (p. 282) Dock says that in chronic recurrent endocarditis "multiple hemorrhages may occur from time to time." He also notes severe inflammation of skin and subcutaneous tissue, affections at first resembling erysipelas, but later extended more deeply and designated phlegmonous. These appeared early and late in heart disease, ending with formation of edema and bullae after 30 hours; staphylococci and streptococci were found.

Drs. Nevins Hyde and McEwen approach the subject more closely in an article "On the Relation of Certain Dermatoses to each other and to changes in the vascular equilibrium" (Trans. Amer. Dermatological Association, 1902, Vol. XXVIII, p. 64). They do not refer specifically to cardiac lesions, but discuss dermatoses due to disturbance of vascular equilibrium. They relate a number of cases illustrating a type which they regard as practically constant and such as justify careful investigation of vascular instability as an etiological agent in the production of the essential pathological processes. From that point of view two main conditions are discussed, first, hyperidrosis, secondly, parkeratosis, as manifested in the skin and nails. Vascular equilibrium they define as "that condition of the circulatory system in which is maintained the proportionate distribution of arterial, venous and capillary pressure which is essential to the proper performance of the functions of the various organs of the body.

With regard to this definition it may be remarked in passing that it describes rather than defines, and that it is based upon pure assumption.

The cutaneous phenomena displayed on the hands and feet regarded by Hyde and McEwen as linked in a pathological chain, and ascribed by them to unstable vascular equilibrium, are the following: "hyperidrosis localis, dysidrosis, hydroa, pompholyx, keratodermia erythematosa symmetrica (Besnier), keratodermia palmaris et plantaris, keratosis palmaris et plantaris, erythema keratodes, symmetrical tylosis of the palms and soles, hyperkeratosis subungualis, subungual keratoses. onychauxis, chronic inflammatory diseases of finger nails and dystrophia unguium." (Op. cit., p. 64.)

At the same time they are careful to state (p. 80) that "unquestionably hand and foot dermatoses occur where vasomo-

tor influences are not the chief etiological factors."

Their main proposition is thus broadly stated (p. 81): "with certain obvious exceptions, such as the nail dystrophies in lepra, arsenical keratosis of palms and soles and toxi-erythematous rashes the fact remains that under each of the titles enumerated a large number of cases have been included which should properly be classed as sequences of impaired vascular equilibrium, and not as special dermatoses."

An interesting case of chronic purpura of two years' standing has been reported by Parkes Weber (Brit. Journal of Dermatology, Feb., 1910). It was associated with malignant endocarditis, with polypoid growths on the mitral valve and wall of the left auricle.

Drs. James Galloway and J. Y. H. Eyre, in a joint communication presented at the Paris International Dermatological Congress in 1900, dealing with the results of bacteriological examination of several cases of acute eczema, mention as a predisposing factor (Montaschrift. für Prac. Dermat., Bd. XXI, No. 5): "Certain organic lesions, especially such as produce circulatory stasis of the skin and consequent edema and malnutrition of both cutis and epidermis."

My own observations go further than those of Hyde and McEwen, inasmuch as they connect a wide range of diseases of the skin with definite cardiac trouble. Almost every type of cutaneous malady is included, many of them where there is nothing to suggest any abnormality of the circulation, either central or peripheral. Galloway and Eyre appear to restrict their observations to obvious stasis and edema of the skin as a predisposing cause of certain forms of acute eczema. My own conclusions point to the essential relationship of central cardiac defects to a manifold class of skin affections, due to disturbance of the surface circulation which may not be registered in erythema, swelling or in any other objective or subjective manner. In many cases the development of a rash, its chronic course and its recurrence I regard as clinical signs arising from and symptomatic of the cardiac abnormality.

Others problems will doubtless suggest themselves to those who as dermatologists or as general physicians may think the matters here brought forward worthy of further investigation. Within the limits of the present paper, which, as already said, must be regarded as a preliminary communication, it has been impossible to deal at all adequately with the various points arising from the general observation. My main conclusions are as follows:

1. That a large number of chronic and recurrent skin eruptions are associated with disease of the heart.

2. That latent or unsuspected heart trouble is comparatively common amongst patients attending a skin hospital.

3. That prognosis in skin diseases in many instances depends on the state of the heart, and that attention to the state of the heart is imperatively demanded in a large number of skin affections.

4. That the circulatory inadequacy which apparently determines the onset and duration of many chronic and recurrent skin eruptions may likewise affect internal organs in a similar manner.

5. That what is called "idiosyncrasy" may in many cases simply describe a pathological instance of healthy reaction to moderate traumatism due to circulatory defect. In this way the irregular incidence of trade and drug eruptions may in many cases be accounted for predisposition being in such cases merely another name for central circulatory inadequacy with its connected disturbance of the balance of capillary circulation.

6. That in all cases of delayed healing of the skin from moderate traumatism of any kind, e. g., mechanical, thermal or septic, the state of the heart and circulation should be carefully investigated.

7. That in some cases the development of an acute cutaneous malady, such as a sun dermatitis, may afford delicate clinical evidence of failure of cardiac compensation.

8. That a similar process of impaired or pathological reaction to traumatism may be duplicated in the deep tissues of

the body as well as on the visible skin, and that inadequacy of the capillary circulation may explain the development of various acute, chronic and recurrent diseases of internal organs following internal traumatism (cancer may possibly fall within this category).

9. That the delayed healing of wounds and the persistence of secondary traumatic complications may depend ultimately upon central circulatory defects and may thus yield clinical evidence of heart disease with failing compensation not recorgnized by the textbooks.

10. That where it is proposed to administer any drug, such as mercury or arsenic, which is known to act as a tissue irritant, the possession of a normal or a fully compensated central circulation should be made a *sine quâ non.*

11. That the dermatologist who wishes to do justice to himself and to his patients should keep an eye upon the heart, as there is evidence to show that many diseases of the skin may be materially modified as to diagnosis, prognosis and treatment by their relation to the circulation.

LICHEN PLANUS.—R. L. Sutton, Kansas City, Mo. (*Journal A. M. A.*), describes certain variant forms of lichen planus which might escape recognition by the practitioner. He also includes in his consideration certain conditions heretofore included in the lichen group, but which have little clinical and no histological resemblance to the typical form. Probably the most frequent of the aberrant types are those with circular patches of closely grouped more or less typical papules. Much rarer are the annular forms from gradual extension from single large papules. Two cases of the latter and one of an incomplete form of the same are reported. A form rather common in England but rare elsewhere is the linear type, the lichen planus striatus of Crocker, in which a narrow fillet of the eruption often follows the course of the sciatic nerve. A recently observed case of this is also described. Sutton thinks the most plausible explanation of this type is that it is due to scratching or other linear injury of the skin and not to nervous disturbance. The vesicular and bullous types of the disease are rare, but two cases are here reported by Sutton, as is also a case of a type followed by atrophy. Other atypical types illustrated by cases are the warty type, lichen planus hypertrophicus, lichen chronicus simplex (Vidal), which Sutton agrees with Brocq and Jacquet in a circumscribed pruritus with subsequent lichenification. It is one of the conditions mentioned as not being one of true lichen planus. The name prurigo nodularis has been given as a name for this condition and will probably be generally adopted. A case of lichennruber moniliformis is also reported, which Sutton thinks is not allied to lichen planus but to prurigo nodularis. In the treatment, besides the regular hygienic and nutritional measures, Sutton has found mercury, as originally recommended by Liveing, greatly superior to arsenic. It is best given intramuscularly in the gluteal region and the soluble form rather than the insoluble form is preferred. In the hypertrophic form it may be alternated about once in two weeks with arsenic, or, better, with arsenic and iron. Alkaline diuretics are often beneficial, but he has found salicylates worse than useless on account of the gastric irritation. Cooling antipruritic ointments which are also more or less curative, and a soothing, non-greasy application which the patient may use at will, are advisable and prescriptions are given. For removing thick scaly patches, the Roentgen ray and carbon dioxid snow are useful. For exceedingly troublesome itching. Sutton recommends a formula, for which he is indebted to Dr. Kanoky, of menthol, thymol, chloral and chloroform with the oils of eucalyptus and wintergreen in alcohol, applied three times daily. It is, he says, as hot as it is efficient, but he has found it useful in many cases of very troublesome itching. No efficient treatment for prurigo nodularis has yet been found, but Sutton thinks repeated freezing with carbon dioxid snow is probably the best plan. The article is fully illustrated.

DRUG HABITS, AND WHO IS TO BLAME?

By C. E. PATTERSON, M. D., Grand Rapids, Mich.

I presume to say there is no question that presents itself to the world today of greater importance than the one under consideration in this article. Consumption and cancer are great questions no doubt and, perhaps, are uppermost in the minds of men today, yet if they would but study a little more closely they would see that destruction by progenators could be remedied about as easily as destruction by our own acts.

While consumption and cancer are purely physical, a knowledge of physical law will surely eradicate them. But with *habits*, alas, it is not the body primarily, but the Soul itself, and secondarily the body. Hence, in the first mentioned we have wholly the physical to deal with, while with habits we have both the Soul and the body. Education in the law of reproduction and right-living and breathing would eradicate either cancer or consumption in two generations, while with habits it would require not only education but mastership of *self*, whereby one must learn to control himself to the extent of overcoming his emotions, passions, and last, but by no means least. his selfishness. This is the monster that is at the bottom of more trouble for mankind than all others combined. Many are so selfish they seem to want to own the whole world, and then want it fenced so none can get inside and, because they cannot fence it they are so troubled they cannot sleep and have to take some sleep producer to lull their souls, in order to give their bodies a little rest.

Now, I would ask my readers, "have you ever heard of a doctor who was so busy and had so many calls to make he had (in his own mind) to use liquor or drugs in order that he might do his work? Was it for the love of his brother man he was working, or was it because he wanted the dollars it would bring? And the fear that some other doctor might occasionally get one of his patients? I ask which? Any one can answer. Then comes the old question, "What doth it profit a man to gain the whole world and lose his own soul?" I do not mean this in the sense that ministers of the gospel would ask it, but in this way, that, when a man, be he doctor, lawyer, merchant or chief, has become addicted to the use either of drugs or liquor, is he longer the same individual as he was before? Your individuality is your soul expression. You have lost it. You are now a sort of Dr. Jekyl and Mr. Hyde. Your addiction to either drugs or liquor makes you so. Of course, men who are under the ban will say, "nonsense, I know I am not changed at all." But let your wife or some near relative speak, and see what they would say. They, if the truth were known, are likely praying night and day that you might become your true self again. You have become blind, and do not see.

My dear doctor friends, if you have so much work you cannot do it without borrowing from your stock of reserve energy by stimulants or narcotics, let your greed for money drop into oblivion and be willing to share with him you call your competitor—and what a profit it will be to you! For if you do not, and liquor or drugs fasten themselves upon you and, as they surely will, bring ruin, morally, physically and financially, *who* is to *blame?*

Thus far we have spoken only of the selfish side of the question, from the doctor's standpoint. View the same question from its commercial side. Years ago our Father country, a so-called christianized nation, at the point of the bayonet forced poor ignorant China to purchase a nation-destroying agent "opium" because England wanted the money. Today we have hundreds of men, or rather forms that call themselves men, who would sell mankind a soul-robbing drug or agent simply for a money price—anywhere from ten cents upward. Dear reader, will you longer stand and let these vampires feed upon your own flesh and make no resistance? Will you stand with your eyes closed, so to speak, and deaf to all entreaties from those who by experience know, and

still offer no resistance? If so, and you in time become a victim, *who* is to *blame?*

And in conclusion I would speak of one other great dangers to the public from these habit producing drugs. A physician is called, the patient is in great pain—extreme pain. The majority of physicians will whip out that little hypodermic syringe, and show his client what a wonderful physician he is, by his quickness in relieving that pain. What has he done?. Oh, he has established himself in that household, so the next one that is sick, *He is the Man.* What else has he done? The moment he gave the dose he put a blindfold over his eyes, so he could not tell one thing about the progress of the disease he was called to treat. Pain is only a symptom, not the disease and he was called to treat the disease, not to cover it up. By this means you fool your patient and get his money and his good will, but some day you may come to your senses and find you fooled yourself even worse. Possibly six feet of earth will prevent your seeing it.

Then again a few dollars make some men mighty blind. If you, by your greed and blindness, have been the means of making one of your clients the slave of some enslaving drug, *who* is to *blame?* Again I ask you to take an invoice of all lay patients you can find and note carefully who gave them their first dose and possibly continued for a length of time prescribing the same opiate mixture. In the majority of cases you will find it was one who called himself "Doctor." In *that* case, *who* was to *blame?*

Dear readers, with these facts staring us in the face, is it not quite a problem just what the government will have to do in order to check this ever-destroying agent that has been the cause of the depravity and ignorance of the Chinese nation and which they have fought hard against, but in spite of their plea, nations, who would send missionaries to christianize them, continue to force them to purchase the devil's man-destroying agent, *opium?*

FIELD WORK IN TUBERCULOSIS.—Mary E. Lapham, Highland, N. C. (*Journal A. M. A.*), says that the mortality from tuberculosis is due more to failure to recognize its beginnings than anything else and emphasizes the importance of educating the public to this danger. She believes that the infection is almost universal among adults and gradually increases from infancy. It may be that a child of 14 dies, not because of a new infection, but because its resistance fails at this age. Prophylaxis in infancy will assist in preventing the development of the disease and she proposes regular periodic tests to determine the weaknesses that may develop into the tuberculosis of the grown-up individual. Practical work among the people is necessary for this purpose.

LOCAL ANESTHETICS.—A. H. Miller, R. I. (*Journal A. M. A.*), calls attention to the lack of exact statements of the dosage of the various substitutes for cocain now in use as local anesthetics. These are used because of their lesser toxicity, but while the dosage of cocain is indicated exactly in the United States Pharmacopeia, the proper dose of its substitutes is generally unindicated and impossible to learn from medical literature. The dosage of these drugs is given in the literature furnished by the manufacturers in strength of solution, leaving one to infer that any amount of the solution of that strength can be safely employed. The dosage is calculated for the local effect only and the general effect of the drug is not considered. To illustrate the point, he refers to a series of cases reported to the Providence Society of Anesthetists, February 28, 1913, of 113 minor surgical or genito-urinary operations in which alypin, one of the safest cocain substitutes was used. One death occurred and in two other cases serious symptoms occurred. The alypin was used in the strength of solution recommended and the amount not definitely measured. In the death, about 2 drams of a 10 per cent. solution of alypin were introduced into the urethra and bladder. There was nothing in the literature of this anesthetic to indicate that the amount used was an overdose. In the United States Pharmacopeia the dose of cocain is given as 1/2 grain and the dose of cocain substitute should be stated as definitely. If this is done further fatalities may be avoided.

REMARKS ON THE BANEFUL INFLUENCE EXCITED UPON THE SKIN BY GASTRO-INTESTINAL INEFFICIENCY.

By W. KNOWSLEY SIBLEY, M. A., M. D., Physician to St. John's Hospital for Diseases of the Skin, London, England.

A very large number of skin eruptions are the external manifestations of a morbid condition of the general system, directly due to a toxemia of the blood, the result of the absorption of morbid products from the gastro-intestinal tract. It follows that in all of these conditions proper attention not only to the diet or "input," but also to the excreta or "output," is of primary importance for the satisfactory treatment of the skin complaint. A system saturated with the toxins absorbed from an overloaded intestine is by no means an uncommon cause of a large number of apparently very different skin diseases. In fact, it would be difficult, in the present state of our knowledge, to name many manifestations (excluding, of course, the various parasitic diseases, both animal and vegetable) which are not, in many cases, the external expression of a general unhealthy condition of the blood supplying the region, the result of a defective assimilation of the digestive processes, or more generally of a delayed excretion of the waste products of the digestive metabolism.

The secret of a good complexion is usually to be found in a properly regulated diet in accordance with the requirements of the individual case, and one so regulated as to ensure an efficient evacuation of all the organs of excretion, especially of the bowels, thus not permitting the by-products of digestion to remain long enough in the body to be in any way absorbed into the general system. The first sign of a want of balance between assimilation and excretion is usually to be found in the colour and condition of the skin, especially in certain regions of the body. A pasty or muddy complexion is often one of the signs of mal-assimilation, or of absorption from the contents of the large bowel, or both. The results of so-called hepatic derangements show themselves very quickly in the colour of the skin, and point to digestive disturbances of various degrees. A large group of skin phenomena under the heading of urticaris, or nettle-rashes, has long been recognized as the direct result of gastro-intestinal influences and are designated "stomach rashes." Many other common diseases, both acute and chronic, are also determined by similar processes. Consider in the first place eczema, one of the commonest diseases the dermatologist is called upon to treat. There is no doubt that the condition of the gastro-intestinal tract plays a leading part in a large number of these cases, and that proper attention to the regulation of the diet, and of the bowels is necessary for the satisfactory treatment. The popular expression of a "gouty eczema," used to denote an eczema in a gouty subject, has much to commend it, for most of the phenomena associated with the term gout or goutiness, are but the varied expressions of a want of balance between the input and the output, or of a mal-assimilation and delayed excretion of the by-products of digestion, giving rise to various systemic disturbances, and among them numerous dermatoses. Psoriasis, again, is often uncomplete change in the diet from a too nitrogenous to a vegetarian one, will often cure an old-standing case. So again, acne, in its various forms, is generally associated with an overloaded bowel, and free purgation is often the most efficient treatment; the same may be said of many cases of purpura. Even in many diseases obviously due to the invasion of micro-organisms such as staphylococci, streptococci, or perhaps even the acne bacillus, a toxic condition of the blood, due to a systemic poisoning from fæcal or other morbid absorption, is necessary for the growth and development of these organisms. From my experience I should say that, speaking generally, the immunity of the skin to micro-organisms is directly impaired by an obstructed drainage system. This list of skin phenomea would be incomplete without mentioning those remarkable and very common pigmentary changes

which occur, sometimes locally, more frequently generally, to which Arbuthnot Lane has drawn attention.

Alcohol plays a very important rôle in the production and keeping up of many morbid skin conditions, especially those of an obviously inflammatory nature, such as erythemas, urticarias, eczemas, and numerour other irritable dermatoses, not omitting to mention some of the more inflammatory types of psoriasis. The immediate effect of taking alcohol internally is to produce an external flushing of the superficial vessels, and so to increase the skin congestion. Tea, coffee, cocoa, and tobacco, are often harmful in much the same way. Complete abstinence from alcohol is of primary importance for the satisfactory treatment of many of these cases. Many people do not drink enough liquids, and these should take copious draughts of water, which should be drunk as far as possible on an empty stomach. A too generous nitrogenous diet often plays an important part in some cases, especially in eczema, acne and psoriasis, and a change to a more or less vegeterian one will often bring about a cure. In some patients a diet of rice and water, in others a pure milk diet, will often clear up an old-standing and very obstinate skin lesion, especially if of an inflammatory or irritable type.

The researches of Metchnikoff have shown how the various lactic ferments arrest and are destructive to many deleterious fermentative processes going on in the intestinal tract. The ingestion of sour milk in various preparations produces a much healthier and more satisfactory condition of the intestinal contents. Many cases of skin eruptions due to gastro-intestinal toxæmias may therefore be satisfactorily treated by this method.

It is evident that in a large number of cases of general skin disease it is the mucous membrane rather than the skin which requires the chief attention. The skin lesion may be controlled and rendered more comfortable by suitable local, more or less sedative, protective or bland applications, but it is to the gastro-intestinal tract that the main treatment should be directed. In every case of skin eruption a systematic examination of this should be made, before determining the special line of treatment. Commencing with the mouth, the whole systemic disturbance may be due to a neglected pyorrhea alveolaris, absorption from which, either locally, or more frequently from the products of this disease being perpetually swallowed into the stomach, setting up a gastro-intestinal catarrh, absorption taking place from this organ.

I discussed the relation between the pyorrhea alveolaris and certain diseases of the skin in a paper read before the Odontological Section of the Royal Society of Medicine two years ago, in which I enumerated a large number of different eruptions which could often be traced to pyorrhea, and the part it played in alimentary toxæmia, and the treatment for which eruptions was to be directed mainly to the cure of the condition of pyorrhea. Some of the diseases I then enumerated were acne, vulgaris and rosacea, alopecia, especially alopecia areata, eczema, erythema, herpes, edema, seborrhea, and seborrheic eczema. To quote from my paper above referred to, I then said, "Many cases of eczema at all ages are due to gastro-intestinal causes, urticaria invariably so. Many erythemas, again, are traced directly to stomach derangements. Even psoriasis is considered by some dermatologists to be an external expression of the same internal troubles, and the most efficacious treatment is one which regulates the diet of the individual, or in other words, the gastro-intestinal absorption."

Leaving the oral cavity and passing on to examine the stomach, there may be a chronic gastritis due to errors of diet, especially from the abuse of alcohol, producing a catarrhal condition affecting not only the stomach but also the hepatic system, and extending its baneful influences on into the duodenum and small intestines. More frequently still, the colon is found to be loaded with old-standing fæcal accumulations, gradual absorption from which produces a general systemic poisoning.

To sum up: The treatment of a large number of general skin eruptions resolves itself into the scientific treatment of chronic constipation. With regard to this most important fact in dermatology, it has to be realized that because a patient has a daily evacuation of the bowels it by no means

necessarily follows that he does not suffer from all the morbid effects of toxic absorption from an overloaded colon. It is not the frequency of the evacuation that is of importance but the quantity, that is to say, that the contents of the large bowel are systematically completely removed, and that there is not an ever-increasing residue left behind. In other words, it is necessary to be sure that the patient is not passing to-day what he ought to have got rid of a week, or perhaps a month, ago.

I have often remarked that most, if not all of the drugs which have been found of benefit in the treatment of general diseases of the skin act chiefly, if not entirely, as laxatives, aperients, or disinfectants of the gastro-intestinal tract, and I believe their beneficial effect is due to their direct local action on the gastro-intestinal contents, rather than to any specific action of the preparations themselves, giving rise to the improvement, or cure of the skin condition. The most popular drug with the older school of dermatologists is arsenic, which is often prescribed as a specific for most of the more or less chronic forms of skin diseases. Arsenical preparations are among the most powerful bactericidal agents known to chemists, and apart from their irritating and therefore laxative effects on the mucous membrane, it is to this property that their so-called specific action is probably due. Mercury, a specific for other skin diseases than those produced by syphilis, is essentially a most powerful germ destroyer. Liquor hydrarg. perchlor.—corrosive sublimate—even in very dilute solution, has strong bactericidal properties, and acts as a powerful and far-reaching intestinal cleanser. Quinine in solution is also a powerful bactericidal agent and disinfectant, and is equally efficacious for this purpose when administered into the stomach, as when used for washing out the bladder or other viscus. Perhaps the next most popular drug, and one which still holds its place, is iodide of potassium. Here again, iodine is now acknowledged to be one of the most effective bactericidal agents known, and hence its utility in the cure of a large number of very different skin diseases, especially when prescribed in comparatively small doses, which permit of the iodine being liberated, and so acting directly on the gastro-intestinal contents. The more recent introduction of drugs of the coal-tar series, such as the salicylates, salol, carbolic acid, resorcin, β-naphthol, methyl violet, etc., which are being more and more extensively prescribed by dermatologists, are all of them bactericidal agents acting directly on the gastro-intestinal mucosa and its contents. The old adage to prescribe aperients in acute, and diuretics in chronic skin diseases is as true today as ever it was. The most popular prescription in the St. John's Hospital pharmacopœia is the haustus vini antimoniale, the most important ingredient of which I believe to be sulphate of magnesia, and it is extraordinary in how many skin complaints this mixture acts as a specific.

I maintain, then, that with the exception of a few specifics for skin diseases, which are themselves the result of specific organisms, either local or general, practically all the other old and modern drugs prescribed by dermatologists act primarily and essentially as gastro-intestinal disinfectants or laxatives, or both. Moreover, all drugs which do not act in this direction are deleterious and positively injurious in the majority of cases. For instance, opium and its derivatives, which, with the possible exception of very occasionally in old people, should never be prescribed by dermatologists. Although this drug may temporarily relieve the distress of such skin conditions as urticaria or pruritus, as soon as its immediate sedative effects have passed off it will almost inevitably produce far worse symptoms and greatly aggravate the complaint.

Ultra-rigid asepsis and minimization of manipulation are the first great essentials in the open treatment of fractures. If these cannot be provided by the environment of the surgeon and by his experience, don't operate.—*American Journal of Surgery.*

THE STATE'S DUTY.

By D. L. FIELD, M. D., Jeffersonville, Ind.

It is the duty of the State to foster and protect the health of her citizens. All states do not do so. They are criminally remiss if they neglect such duty. They should investigate the qualifications of those who hang out an "M. D." shingle and, above all things, make it a felony to vend medicine on the streets. In spite of law, protection, decency and honesty, the street faker is still on the job.

Then, we have men who profess to be physicians who are nothing but charlatans. They victimize not only the ignorant but those who show intelligence on almost anything else except common sense and judgment as to the qualifications of a so-called physician. If there is any one thing the public is most ignorant of it is the nature of disease and the claims of scientific medicine. The glib, voluble quack will get them more often perhaps than the best qualified doctor. They credit the pretensions of those who proclaim themselves physicians and are misled by the audacity and extravagant claims of the charlatan.

No class of men in civilized society understand the art of deception so well as the montebank. The laws of the state should step in and make it impossible to impose on an ignorant public by such quackery. The duty of the state is plain and imperative—to allow only those who are qualified to practice medicine. Even examining boards grant licenses to *all sorts* of practitioners. I know of men who are licensed to prey upon the public who are certainly not qualified to practice the art of medicine. Their ignorance is absolutely shameful. Such men should be required to cease practicing. In this good state we license osteopaths, hydropaths, electropaths, homeopaths, medicophysics (what ever that means) and I have known them to license morphine eaters, habitual topers and almost any old thing.

I heard one doctor talk of the "veriform movement" of the bowels. And he belonged to a medical society. We have hereabout two doctors whom, I am sure, could not tell where to locate the os inominata. It is ridiculous to inflict the profession with such ignorance.

To be sure, the matter of sanitation, quarantine, etc., is alright if enforced, as we have law enough to protect the public against infectious diseases. Local boards attend to this.

ABSTRACTS

GASTRO-INTESTINAL HEMORRHAGES IN THE NEWBORN, within fifteen to twenty days after birth, says *Pediatrics*, are of rare occurrence, but in this country have scarcely received the attention their gravity deserves. The importance of these attacks is so considerable and the disorders they may bring in their train are of so grave a nature, that it behooves the physician to give the subject at least a certain amount of study so that he may know how to act when he finds himself in the presence of an accident of this kind. Much of the current literature bearing on the subject has been contributed by Frenchmen, who are always well to the front, both in investigating and treating the diseases of children. As well known, melena in infants is often spurious and not in any way symptomatic of an organic change in the digestive tract, but is simply caused by blood swallowed by the infant, and then discharged either by the mouth or rectum. In a case of melena proper, symptoms vary with the quantity of blood lost. If the hemorrhage is scanty, general symptoms are lacking; on the other hand the phenomena usual with large losses of blood are present, except that the fall of

temperature does not always exist. Melena neonatorum occurs in the majority of cases within from three to ten days from birth, more often within three. The cause of many of these hemorrhages is obscure; occasionally ulcers of the stomach or duodenum have been found, but in most instances the hemorrhage has been capillary, and nothing but a congested state of vessels has been discovered. Grandier and Ritter have given as a probable cause a condition allied to hemophilia.

In treating infants suffering from melena proper, no nourishment must be given that has a tendency to congest, the suckling at the breast should be prohibited, the feeding should be effected with a spoon, containing either mother's or goat's milk diluted with iced barley water. The skin should be rubbed to arouse circulation, and above all the respiratory movements of the infant should be left perfectly free. The application of heat is beneficial. The French pin their faith to the use of the "couveuse," and their physicians have tested this method with the most encouraging results. The "couveuse" was first invented by Dr. Farnier, and in 1893 was improved upon by Dr. Lyon, of Nice, and may be described briefly as a woven wire mattress suspended in a glass case, the latter being heated by a water coil, and kept sweet and wholesome by a constant inflow of purified filtered air. The infant, wrapped in cotton wool, is placed in this receptacle, heated at a temperature of from 35 to 37 centigrade, and is kept there until convalescence is established. When the "couveuse" is not obtainable, Loranchet advocates enveloping the infant in warm cotton wool. Hermary strongly recommends friction with alcohol. Opinions differ as to the effectiveness of medicine administered internally. Hermary advises perchloride of iron, Eustace Smith suggests gallic acid, extract of kameria, or oil of turpentine in mucilage. Oni, on the contrary, deprecates the internal use of medicine, on the grounds that the stomach, before everything, requires rest, and prefers subcutaneous injections of ergotine. When the anemia is severe, Lutin, Hutinel and Weiss advise injections of a weak solution of chloride of sodium; inhalations of oxygen when possible, artificial respiration and injections of ether are often of benefit.

After the bleeding has been finally arrested, the infant will need careful overlooking for some time, and if syphilis has been diagnosed as a cause, mercurial treatment should be commended without further delay.

CORPUS LUTEUM ORGANOTHERAPY.—W. T. Dannreuther, New York (*Journal A. M. A.*) discusses the subject of organotherapy by administeration of corpus luteum extract. He speaks of the unsatisfactory experience that he, with others. has had with the use of simple ovarian extract and maintains that corpus luteum is the chief structure concerned and the probable source of the internal secretion of the ovary. The particular conditions for which it is valuable and to which its use should be limited are, he says, functional amenorrhea, of scanty menstruation; ovarian dysmenorrhea; disturbances during the menopause and consequent on it; neurasthenic symptoms during menstrual life; sterility not due to pyogenic infections or mechanical obstruction; impaired function of one ovary without due compensatory activity of the other; repeated abortion not due to disease or mechanical factors and the early hyperemesis of pregnancy. He insists on the importance of using extract obtained from the ovaries of pregnant animals only, and thinks that the failure to do this is the cause of the lack of uniform success of many physicians. He uses 5-grain capsules three times a day and has seldom had occasion to exceed this. There is nearly always a drop of blood-pressure with its use and it should be discontinued if this is too rapid. Before beginning the treatment and weekly thereafter a careful sphygmomanometric reading should be taken and if the fall is more than 15 mm. the treatment should be stopped until 10 mm. of this has been recovered, when it may be cautiously renewed. The blood-pressure should never under any circumstances be allowed to fall below 90 mm. The question whether corpus luteum extract can replace the normal function of the ovary is, he thinks, answered by a case he reports in which menstruation was reestablished

after a bilateral oophorectomy, the tubes also being removed for pyosalpingitis. The specimens removed by the operation were carefully examined and he is satisfied that no ovarian tissue was left.

THE CARE OF SURGICAL PATIENTS.—Writing on this subject in the *Medical Record*, Dr. Donald C. Balfour says: So much has been written relative to the care of surgical patients that it may appear presumptuous to attempt to offer anything worth while in the limits of a paper on this subject. "I shall only synopsize the essentials of surgical treatment as they are in vogue today, which will necessitate more or less repetition of well known and accepted principles. Some justification for this is found in the constant changes, minor in detail it is true, which are taking place in the conduction of surgical cases. To facilitate matters I would discuss the management of these patients under four headings: (1) Care before operation; (2) care during operation; (3) postoperative treatment, and (4) advice to patients.

The fourth point and worthy of emphasis is the importance of explaining to patients recovering from a surgical operation just how to take care of themselves and what they should expect in the way of symptoms after being dismissed from the hospital. It is a mistake to allow patients to believe that their recovery will be complete in a month or two after an operation on the gall-bladder, stomach, or even the appendix. The post-operative treatment of these patients in the way of judicious living should continue for several months according to the type of operation. To patients who have been operated on for exophthalmic goiter should be carefully explained the possibility of a recurrence of the trouble, and all the circumstances of every case should be explained to some member of the family at the time of operation. If there is a possibility of hernia following drainage the patient should be apprised of the fact. These patients should also be told as explicitly how long to refrain from their usual work.

In conclusion, I would emphasize the fact that the basis of treatment of surgical patients is simplicity. The after-care should cause little worry except in the event of complications, since the work should be completed in the operating room. As Rutherford Morison says, "Incomplete operations are never satisfactory and are more disastrous in their results than the most heroic, when thoughtfully planned and executed."

EFFICIENT METHODS IN THE TREATMENT OF PLACENTA PRAEVIA.—An interesting article on this subject by Dr. James A. Harrar, appears in the *New York State Journal of Medicine*. He states that no less than four hundred articles have appeared within the past five years on this topic alone, while the methods of treatment advised have been almost as extensive as the literature. Most authorities agreeing that it is a major surgical condition, and that it requires early treatment to attain the best results for mother and child.

The author's personal experience of 26 cases and his recent review of the clinical records of 70 beds from this cause occurring in the past 20 years at the New York Lying-in Hospital draw forth the following conclusions:

A number of factors may reasonably be assigned as the cause of death in these cases, and we may with profit take heed of the following warnings:

1. Cases of hemorrhage stand chloroform badly; ether is best. Three women went into collapse under chloroform before any attempt at delivery had been made.

2. Removal of tampon and repacking on account of inefficiency of the first tampon in bad practice. Several fatal cases were repacked three times before final delivery. Each change of tampon means fresh loss of blood, and increased opportunities for infection. If more thorough packing seems necessary, introduce more gauze on top of that already in place.

3. Rapid manual dilatation of the cervix before it is well taken up, and open at least to a diameter of three finger tips, invariably results in deep cervical lacerations, or rupture of the lower uterine segment. Accouch-

ment force has no place in the management of placenta prævia.

4. Forcible distension of the large dilating bags placed extraovularly, *i. e.*, before the membranes are ruptured, with the servix but slightly dilated, is liable to rupture the lower zone. This is by reason of the great increase in the intrauterine content.

5. Neglect to tampon the uterus and vagina firmly at once after delivery is dangerous. Tampon after the occurrence of post partum hemorrhage is too late.

6. Removal of this post partum tampon and repacking because of continued bleeding is to be avoided. If you are assured that there is no laceration of the cervix, it is much better merely to introduce more gauze, rather than remove the original tampon. The hemorrhagic seepage that frequently persists after a proper tampooning of the uterus and vagina, is in many instances from unrecognized lacerations of the cervix and lower uterine zone.

Besides the 50 women that died of shock and hemorrhage, there were 14 that died of puerperal infection; 5 of rupture of the uterus, and one of œdema of the lungs. No doubt in a certain number of deaths listed under shock and hemorrhage, partial or complete uterine rupture played an unrecognized part in the fatal termination.

ROENTGEN-RAY BURNS.—G. E. Pfahler, Philadelphia (*Journal A. M. A.*) claims that we have learned how to avoid Roentgen-ray burns, which were so numerous in the early years of this agent. Today we rarely hear of their occurrence and the belief is gaining ground in the profession that they can be used with safety by any one. This is true only so far as the ray is used by those who know the dangers and how to avoid them. There is danger, he thinks, that the combination of enthusiasm and a false sense of safety may lead to bad results when the rays are used by untrained and unskilled physicians. It is a fact, he says, that as used today, they are far more dangerous than they were ten years ago, because they are ten times more powerful and the modern apparatus is capable of a much larger output in a given time. Ten years ago 1 to 5 milliamperes were used in examinations, while today 10 to 100 are employed. The effect of the Roentgen-ray on the tissues depends on the quantity absorbed and the degree of sensibility. Those that have passed through have practically no effect. To avoid bad effects one must be able to judge what penetration is needed. In roentgenoscopy it is not necessary to use a great amount of current and the time and quantity should be kept at the minimum. To avoid burns one must keep in mind, he says, the principles governing the cause of the burns and he gives the following directions: "1. To use as small a quantity of rays as is consistent with the examination. 2. To use a quality of rays that will penetrate the tissues and not be entirely absorbed by the soft tissues. One can learn to judge the penetration by frequent use of the penetrometer and by the making of many roentgenograms. 3. To make every examination as short as possible, thereby lessening the total amount of rays to be absorbed. 4. To use the intensifying screens when practicable. 5. To use filters for the elimination of the softer rays. 6. To confine the rays to the part actually under examination. Burns of the operator may be avoided: (1) by keeping entirely out of the field of the rays, by working from an adjoining room with lead-lined walls between, or by the use of lead-lined cabinets; (2) by confining the rays to the tube, so that the only way of exit is through the aperture made for the examination of the patient; (3) by means of protecting shields, aprons, gloves, masks, etc. In fact, all these should be combined. Burns during Roentgen therapy may be avoided, (1) by following the same general principles referred to in diagnosis; (2) by measuring each dose given and never exceeding the limit of skin toleration as indicated by the dose meter; (3) by allowing an interval of three weeks between the repetition of the dose on any particular area of skin; (4) by use of more filtration than would be used in diagnostic work; (5) by keeping in mind the fact that epithelium and glandular tissue are more sensitive than other tissue to the rays; (6) by avoiding any other form of irritation on the skin treated, such as counterirritation, high-frequency currents, liniments, stimulating ointments, antiseptics, etc." Details

in following these principles may vary with the individual and his circumstances, but they deserve careful attention. Roentgenology is, Pfahler believes, more properly a specialty than others. The users of it must be a good physician and pathologist, have a large equipment, must master the details and always be cautious.

"THE SEXUAL LIFE OF THE CHILD."—Jas. G. Kiernan, in the *Urologic and Cutaneous Review,* says "The Sexual Life of the Child," in accordance with the laws of biology must develop along lines marked out by the type. As the phenomena of sexual selection demonstrate, a complex mental state has resulted from the evolution of the simple search for physical sexual means of satisfying protoplasmic hunger. These sexual selection phenomena show that pleasure has ceased to be dependent on simple sexual conjugation, since ideas of beauty, of attraction to the most beautiful, and of material love have evolved from the sexual desire to satisfy protoplasmic hunger. Thus have been developed inhibitions on explosive sexual performances which tended to restrain egotism evident in the purely sexual propensity. Hence pleasure associated with conjugation with a given subject arose on sight of that subject and sexual pleasure evinced itself in attempts to please the cause. These repressed explosive manifestations of the sexual appetite, thus producing more intellectual and less obvious physical enjoyment of sexual society. By an ordinary law of mental association, attempts to please the cause of sexual pleasure, in themselves finally pleased without the presence of the cause. Thus developed romantic love which restrained egotism, and restraints on egotism constitute the basis of morality. A secondary "ego" was thus developed, which, when stimulated by favoring conditions, began to overwhelm and occupy the place of primary "ego." The subjectivism of the primary to the secondary "ego" thus dominant, became the acme of sexual gratification. The passage from the simple incoherent undifferentiated to the complex coherent differentiated with a loss of explosive force is as evident here as elsewhere. The child, as Harriet Alexander points out, is at first an egotistic parasite in which the development of morality in the true sense of the term denoted in the golden rule is the creation of a secondary ego which takes into account the rights of others, in thought, speeech and otherwise. This is slow of growth and when needed, associating power are absent or retarded, will not occur. In the child, all potentialities of the future adult are latent in a generalized type.

"The child," remarks Havelock Ellis, "lives in the present, the emotions or the desire of the moment is large enough to blot out for him the whole world; he has no foresight, and is the easier given up to his instincts and passions." Our passions, as Hobbes said, brings us near to children. Children are naturally egotists; they will commit all enormities, sometimes, to enlarge their egotistic satisfaction. They are cruel and inflict suffering on animals out of curiosity, enjoying the manifestations of pain. They are thieves for the gratification of their appetites, especially the chief, gluttony, and they are unscrupulous and often cunning liars, not hesitating to put the blame on the innocent when their misdeeds are discovered. The charm of childhood for those who are not children lies largely in these qualities of frank egotism and reckless obedience to impulse. Most people who can recollect their own childhood—an ability which does not, however, appear to be very common—can remember how they have sometimes yielded to overmastering impulses which, although of a trivial character, were distinctly criminal. The trifling, or even normal, character of such acts in childhood is too often forgotten by those who have to deal with children.

A. Moll, for these reasons, does not support the claims of Freud that the child's sexuality is polymorphous perverse, that is, it is made up of four rudimentary instincts, hetero-sexuality, homo-sexuality, masochism and sadism. Sexuality in the child is autoerotic. E. Stier attacks Nacke's and incidentally Freud's position on the existence of congenital homo-sexuality. This is the rather narrow cavil against tendency to a thing being expressed as a thing. Man is not congenitally capable of walking or talking, but has potentialities for these which

may not appear because of defect. He is born with neither the congenital tendency to homo-sexuality nor hetero-sexuality but with sex tendencies which intra-uterine stress may arrest or develop. Erogenic zones, according to Freud, are not restricted to the sexual organs, but may occur in the mouth, lips, and breast. With puberty occur two important sexual factors—end-pleasure attended with the act and fore-pleasure with pleasurable excitation of the erogenous zones. In normal sexual evolution hetero-sexuality becomes dominant and the others shrink into the background. E. Stier has observed many children in the *Charité*. Among 300 children, including juvenile delinquents, homo-sexuality did not occur. Sadism was quite common.

He denies in fact of numerous reported observations, that homo-sexuality occurs in animals. Certainly the phenomenon called "bulling" in cattle, while rarely thus acting, does give rise to it since breeders have observed repulsion to the bull despite all the evidences of heat. Both Freud and Stier lay too much stress on fully developed instincts and ignore an indifferent stage. A congenital tendency to homo-sexuality at puberty is what is claimed by Nacke. Tarnowsky, twenty-six years ago, pointed this out. He divided homo-sexuality into congenital, the tendency appearing at puberty; homo-sexuality resulting from an acquired neuropathic diathesis; homo-sexuality from insanity; homo-sexuality from obsessions; homo-sexuality from satiety due to vice. The last type mentally is not homo-sexual since the mental image is of a new found woman. Stier disputes, and justly, E. Carpenter's claim of an intermediate sex. The being so denominated is really an abnormality arrested at a certain point in embryology.

SULPHURIC ETHER LAVAGE.—In a preliminary clinical report of thirty cases treated by the Souligoux-Morestin method of sulphuric ether lavage of the peritoneal cavity, G. De Tarnowsky, Chicago (*Journal A. M. A.*) says that his attention was called to the method during a recent visit to the Paris clinics where it is used in five hospitals as a routine measure in all laparotomies. It was his privilege to watch the *modus operandi* and to notice the absence of unfavorable sequels. Eight years' experience with ether as a local disinfectant had convinced him already that it was harmless as regards cell degeneration and he quotes the French authorities to the same effect. He began using it in his abdominal operations in the latter part of August, 1913, in both private and charity cases with uniformly gratifying results: The technic is described by him as follows: "After removal of pathologic tissue free pus is carefully wiped out; then ether is freely poured into the abdomen and is allowed to come in contact with all of the viscera in a case of general peritonitis. The viscera are literally washed in ether, hence the term 'lavage' adopted by the French. As much as a quart of ether has been thus used. After having remained in contact with the abdominal organs for from two to five minutes, it is mopped out by means of gauze sponges and the abdomen is closed with one small drain. In circumscribed peritonitis, the pus cavity having been wiped out, is filled with ether and the abdomen is closed without drainage. In pelvic peritonitis, ether-soaked sponges are applied to all involved surfaces, and then 2 ounces of ether are poured into Douglas' pouch and the abdomen is closed without drainage. The immediate effect of ether, thus applied, is to cause a momentary capillary contraction followed by hyperemia of the viscera. There is a moderate formation of carbon dioxid in the abdomen, evinced by a bubbling sound and the escape of bubbles from the surface of the ether. Ether is slowly absorbed by the serosa; this is proved by the fact that no change in the anesthesia of the patient has been reported to date." De Tarnowsky's thirty cases included three cases of gangrenous appendicitis with general peritonitis, four cases of localized abdominal peritonitis, two of pelvic peritonitis and one of acute cholecystitis with adhesions in which the bactericidal action was very apparent. The remaining cases were not acutely septic. In 75 per cent. the postoperative pain and restlessness were lessened and were not increased in the remaining 25 per cent. He is convinced that there is less pain than there is ordinarily encountered and there was no mortality in this series. Experimental study on animals is being carried on by Dr. Bissel in the Cook County Hospital.

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BAD HABITS!

Doctors lose out from bad habits just as any other business man will. One among the besetting sins of too many doctors is a passion for baseball. They are baseball crazy; and go to see games two or three times a week, to the neglect of the sick. The public will not stand for pleasure-mad doctors. They are sure to lose business, as well as the good opinion of those who see them so often "hurrahing" at ball games. The auto craze also is doing doctors much harm, because on Sundays, and special occasions, they get a load aboard and ride all over the country, being gone from home until a late hour at night.

Doctors should tarry at the bedside of the sick long enough to properly examine and prescribe. They should be polite, and not talk *too* much. I know of a physician who, after attending to the sick, would spend an hour talking religion, or politics.

One of the most disgusting habits is that of tobacco chewing. I have known doctors who would go into the sick chamber with a quid of tobacco in their months, and every few minutes would get up, open a door or window and spew out a mouthful of tobacco juice! The fact is, a doctor should not chew. Smoking is bad enough; but not *quite* so objectionable as chewing.

And some doctors smell of onions! A judge once said, if a woman could prove that her husband chewed tobacco, ate onions and drank whisky, he would grant her a divorce without further evidence. I told your readers once about Doc Samson who talked so loud in the sick room that he could be heard across the street, and I would like to impress, on young doctors especially, the importance of learning to talk softly and, to be guarded in what they say.

Look to your clothes and your outer man. A fastidious, well-to-do woman discharged a very able physician because he had soiled fingers and linen, preferring one less able who had well groomed hands. If there is one thing which is noticed by the laity more than any other it is the apparel and cleanliness of the doctor. There was a time when we all wore silk hats and Prince Albert coats—always black, it was a badge of the profession—but now the public is hardly able to distinguish the doctor from any other business man. Even the clergyman is usually distinguished only by his sanctimonious air and not by his garb. The Catholic priest, of course, being an exception.

Another very reprehensible habit among physicians is that of sitting in the office with feet cocked up reading trashy fiction, instead of the necessary medical literature. It is surprising to note how many do this and of a consequence lag behind in the march of progress in medicine.

And keep out of politics! It is right for you to have your convictions and maintain your political principles but do not

seek office! The money you may get from political office will be taken in at the spigot and lost at the bung. I know whereof I speak having run for Senator for three counties; and was recently solicited to become a candidate for Mayor, which was declined *most* emphatically. Franklin once said that "Experience keeps a dear school; but fools will learn in no other."

We all learn from experience; and a *lot* from *observation.* D. L. FIELD.

PREVENTION AND CURE OF CANCER.

Expressing his regret that science has not yet perfected a cure for cancerous conditions, Syms, *N. Y. State Journal of Medicine,* makes a plea for the dissemination of the information we already possess and which has proven to be based on facts.

Cancer is not a growth of any extraneous substance or tissue within the body. It consists in a growth of cell which are perfectly natural to the body. These cells are either displaced or misplaced as to their situation and they are abnormal in their arrangement and relationship, one to the other, but there is nothing abnormal that we can identify as a cancer cell.

We believe that cancer is very much on the increase for some reason or other and we do not know what this reason is.

We know that cancer is at first a purely localized disease. We know that cancer has a tendency to spread by a natural growth and to develop in and through the lymphatic channels in its neighborhood, and through them to become disseminated throughout the body.

We know that complete removal of a cancer at the time when it is strictly localized and not disseminated will result in cure of that cancer.

We know that incomplete removal of a cancer with its outlying roots will not result in cure, but will result in continuance, either at the original site or in some more or less remote part of the body.

We know that in its early stages cancer is localized, in its later stages it is more or less widespread. We know that with complete removal during the early stages or during its localized condition, cancer is curable.

While we do not know the actual cause of cancer, we do know something of the causation of cancer, for we know that cancer often does result from prolonged irritation, and we know that there are certain conditions which precede or which predispose to the development of cancer. These are known as the precancerous states, or precancerous stages. This is the most important knowledge we have concerning cancer, for by carefully acting upon such knowledge we can prevent, not cure but prevent, a very large portion of cancer.

We know that there is no specific cure for cancer, there is no serum and there is no vaccine, and there is no chemical which will act as such.

But we know that a properly executed surgical operation performed at the time when the cancer is still localized will result in cure in a large proportion of cases. And we know that today this is the only reliable method of cure at our command. And we know that by remedying or removing abnormal conditions we can prevent a large amount of cancer. In the recognition and in the employment of these two established facts lie our hope.

There is a chance for early cure; there is a chance for prevention of this dreadful disease.

Let us pursue our consideration of this subject under several heads.

Let us first consider the prevalence of cancer as compared with several other diseases. Then let us touch upon the diagnosis of cancer in certain situations of the body. Then let us consider briefly the relative curability of cancer of certain organs. Let us give most of our thoughts, however, to the recognition and to the cure of the predisposing causes of cancer, namely, to the precancerous states, and then let us touch briefly upon what has been done for the practical solving of the cancer problem and what further may be done in the way of a successful anti-cancer campaign.

EARLY DIAGNOSIS.

When children are attacked with the eruptive fevers it is often impossible to say at once just what the trouble is. The rash or some other distinctive symptom must appear

before decision is made.The family as well as the physician understands this and all concerned think nothing of the delay. The unfortunate thing about it is that one is likely to get the habit of waiting a while till something striking develops and the disease, whatever it may be, gets well underway in its course. Primarily this is due to ignorance. There are some of the exanthemata that no one can decide about at first because no one knows. There can be no blame attached to this, for we are all striving to find the unknown, and it is not anyone's fault that it has not yet been discovered.

In diphtheria, we have the means of early diagnosis and every community, almost, provides its physicians with laboratory tests of the pharyngeal secretions. The early diagnosis and the possibility of prompt treatment have saved a tremendous percentage of lives, as we all know.

But there are other diseases that we can no better afford to wait for than we could in diphtheria. Notable among these is acute osteomyelitis. It is a disease that is abscured from us because of the term "rheumatism" and the control the word has over the lay and sometimes the professional mind. When the child begins to suffer pains in the long bones and at the joint, the family is likely to delay a day or two while they decide what kind of rheumatism it is and whether it can be outgrown. When the doctor is called in, precious minutes have been lost, for the progress is often so rapid as to make invasion of the shafts seem almost a matter of minutes in its extension. Certainly there should be no delay in diagnosis nor in the radical surgical treatment the disease demands. The bone should be freed from pus instantly, both under the periosteum and in the medullary canal if one will prevent the chronic osteomyelitis from ensuing. Cripple legs often show the lack of early diagnosis of acute oesteomyelitis.

The early analysis of the condition causing club feet of various sorts will prevent the use of needles and crude apparatus to push or force them into shape. Not only is a child's gait interfered with by club feet, but the development of his whole moral nature is profoundly affected by the limitation of childish activities and moral companionships the crippling details. An early study of these conditions and the application of correct mechanical principles in surgery have been conclusively proved by photographs, skiagraphs and moving pictures to be successful in practically curing the deformities, Here again, while the pressure for time is not so great as in the previous instances, there is a serious loss in the developmental power of the component parts of the deformed limb as the years are allowed to pass.

X-ray pictures are of the utmost value in assisting the study of the foregoing, and in addition they have fields of their own for the most enlightening investigations. This is shown in the gastrointestinal work that is being done by advanced radiographers. No longer need the physician speculate upon the result of his palpations, splash sounds and pressure symptoms while trying to decide upon intra abdominal conditions. He can have photographs made and skilled interpretations of them given that will show beyond a peradventure displacements and enlargements of the viscera, and in addition, early diagnosis can be made of cancer and other troubles that will bring them within the time limit of curative surgery.

The scientist of today is concerning himself with the little things that show the beginnings of the gross lesions, and by learning to recognize them the instant they appear, he prevents destructive diseases and saves health and lives.—R. R. D., in *Jl. Record of Medicine.*

SELECTIVE BREEDING.

Under this attractive caption a paper by a recent writer, Howard Ayres (*Lancet-Clinic*), makes the startling proposal that a concrete application be made of the popularly discussed eugenic principles. The writer says: "suppose a group of eugenically fit individuals selected for preponderating brain capacity (one can almost feel the signs of unrest in intellectual centers now threatened by an invasion of seekers after the eugenically fit, those of preponderating brain capacity), were to mate within the group, and for generations thereafter their descendants—such as were fit and up to the standard, together with such additions as were made to the group from time to time, followed the custom of seeking their mates

within their selected groups. Would not the genetic result, even in a few generations, be an improved race of humans? There can be no doubt of it. All this could be accomplished without interfering with the other affairs of life except such as might be non-eugenic in their character. Business, social and civic duties within the commonwealth would remain undisturbed. The group would not be set apart from the community, but would soon be set over the community as a result of persistent breeding for brains and other good qualities."

All of this would sound quite plausible, indeed, were it not for certain dominating elemental qualities of the human breast which would again and again recur even in the best regulated eugenic colonies. Thus, it would be just like some unreasonable female member—forgetful of duty to posterity—to fall in love with a rank outsider of unlovely physique and mediocre brain capacity, and engage with him, aided and abetted by an old-fashioned person of theological training, in a nefarious project to defeat eugenic aims by bringing into being a tiny, red, crinkled mite conceived in a moment of riotous abandon rather than during a definitely appointed spell of austere eugenic influence. Then again women at times are seized by such vagaries—thus it could easily happen, even in the happiest of eugenic communities, that some perverse female eugenist at the crucial moment might refuse to submit herself to her allotted partner and for no other reason, mayhap, than a settled conviction—silly and out-of-date as it may seem—that a normal woman demands love in her sexual relations. But few women would give themselves up to brood-mare purposes.

In theory, women are such staunch supporters of eugenic principles—in actual practice, however, a physical and intellectually magnificent female is more than likely to wed a miserable, scrawny runt, and with no more unassailable reason than "he's the man." Eugenic theorizing is engaging much attention at the present time and justly so, too, for to dream of a perfect race is a satisfying delight, but we might as well remember at the same time, that just as long as sexual attraction determines the choice of life partners, just so long will eugenics be a thing to talk about rather than to apply practically.

SOME INTERESTING EXTRACTS REGARDING THE MUCH DISCUSSED QUESTION SEXUAL VICE, AS IT APPEARED MANY YEARS BEFORE OUR TIME.

Those good souls (all men are for them) who are devoting their efforts in a direction calculated to reduce the traffic in white slaves cannot but read with the deepest interest the accounts which have come down to us describing similar labors of several hundred years ago. Legislative enactments aimed at prostitution are almost as old as the vice itself. The lawmakers of the ancient Jews, Greeks and Romans seriously contemplated the iniquity of the traffic in women and passed laws looking to its relief—but prostitution continued as before. The subject of social prophylaxis among the ancients and people of the middle ages is highly absorbing, all the more so because of the added interest reforming influences of today have given this phase of prostitution, and if this paper bids fair to run into an unusual length let the reader bear in mind the age, interest and importance of the subject and indulge the writer.

Since Christianity has ever had for one of its greatest purposes the protection and elevation of womankind, it is to be naturally expected that the most positive steps toward the correction of abuses involving women would spring from Christian hearts, and so it has been. Even the corrupt Roman Empire, after receiving its tincture of the new religion, halted in its sensual course long enough to inveigh against the institution of prostitution. It is gratifying to learn that several of the Christian rulers of Rome—Constantine, Constantius, Theodosius the Younger, and Justian, to name a few—pro-

nounced severe penalties against the debauching of young females and encouraging them to lead a life of shame. But such laws among a pleasure loving people lacking the moral stamina to subscribe to the rigid doctrine of sexual cleanliness, could not be a force in the uplifting of women, and the nation's vices continued as before. Until the rude tribes of Northen Europe had come into contact with the more complex civilization of the Roman nation, they had possessed a stern morality which maintained female virtue and promoted manly vigor. Tacitus was one of the early writers to comment on the unyielding chastity of the unlettered German women. But conditions were to change, the change coming with the extensive campaigns waged by the tribes of the North against the decaying Roman nation. It is a noteworthy fact that when two nations of entirely dissimilar moral types are pitted against each other, and the corrupt nation suffers defeat, the victorious host takes on with surprising celerity the vicious habits which had brought about the defeated nation's downfall. Thus, by peeping into the sociological conditions of the peoples we are dealing with at the present time, we may easily trace the evil influence exerted by the hothouse civilization of the Romans upon the coarser fibred but morally cleaner Huns and Goths.

This former high order of morals suffered pollution from which it never cleansed itself. Henceforth a laxness developed in the erstwhile moral Northern bosom. To the consternation of the tribal rulers prostitution began to fasten itself upon the long chaste barbarians. To our eyes the first evidence of this commencing looseness is to be seen in the passage of laws of a prohibitory character. Thus when a woman lost her respectability she was punished by expulsion from the city in which she lived. She was cut off from all family communication and became virtually a slinking outcast. Although the Visigoths visited the foregoing and even severer penalties upon prostitutes, yet the practice was not stamped out for the main offenders, the more elusive seducers and procurers, were not so easily reached as the poor victims themselves. In many cities prostitutes who ventured out into the streets and public places were heavily fined, scourged and thrown into prison. The decree of Theodoric threatening death to those who gave shelter or support to loose persons, is a clear indication of the seriousness with which the Goths bent themselves to the hopeless task of freeing their land from the stain of prostitution.

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The more advanced nations early realized that the only result of prohibitory legislation upon prostitution would be to drive it from public supervision into dark, noisome places and make it all the more difficult to get at and control. The early church was sensible enough to acknowledge that the continuing cause of prostitution lay not in female looseness but, on the contrary, in male viciousness, and that if public prostitution were stamped out a widespread hidden immorality would follow of a much more corroding character. "Suppress courtesans and you confuse all society by the caprice of the passions," were the wise words of St. Augustine at a time when the subject was being treated to a heated general discussion. However, the inhibitory and protective value of police supervision was appreciated, and we find that instead of absolute prohibition, police rules were made providing for the segregation of public women and the adoption of a distinctive dress, the purpose of which was to differentiate brothel inmates from decent women. This dress was also calculated to protect virtuous females from the solicitations of passing libertines.

Jesus Christ forgave a prostitute, and it is more than pleasing to read that this sweet charity was not forgotten by the fathers of the early church when they took the matter up for consideration. While in many instances the regulations they adopted apply to prostitution were not such as to merit our approbation, yet in the main they never lost sight of the fact that in prostitution woman is not the chief offender. We find this beneficent influence standing out with clear distinctness in the rigorous prosecution of those who made prostitutes and trafficked in their souls. One scoundrel who had long been notorious for leading innocent girls into the byways of hell, and who had come to his deathbed, craved pardon of the Council of Elvira for his heinous sins. "Miserable

wretch; brand of hell!" exclaimed Merot, "Dost thou believe that when the accursed soul is lost in eternal pains, God will be content? No, he will augment the punishment." And he further assured the miserable wretch that at the hands of those whom he had debauched and sent to hell, would he receive his merited punishment.

Largely through the investigations of Rabuteaux into the sociological conditions of Europe during a time dating from the rise of the Christian church until well into the Middle Ages, are we favored with our knowledge of the legal measures directed against prostitution and those profiting by its practice. One of the highly gratifying features of this author's researches appears in his descriptions of the severe penalties meted out to those plying the procurer's trade. In 1367 there was published in Paris an edict threatening the procurer with confinement in the pillory, branding with the red-hot iron and expulsion. Some years later, 1415, there appears in the municipal records an account of the punishment of several wretches who had engaged in luring girls into prostitution. The criminals were led into a public place, branded with a sizzling iron, their ears mutilated, and then they were sent in the pillory. Sometimes the procuress was mounted on an ass, her face toward its tail, suitably placarded, and paraded through the streets of the city. She was then publicly lashed and either sent to prison or exile. (Mayhew.) Occasionally the culprit suffered additional punishments. Thus in 1399, several men and women who were plying the procurer's trade in Paris were seized, and following the above described penalties, suffered in addition the loss of their hair by fire and their property through confiscation.

As much as we must applaud the French vigor in attempting to stamp out prostitution by the employment of such measures as have been just described, yet we cannot approve of the punishment they at times visited upon the prostitutes themselves. A notorious woman of Toulouse was conducted to the town-hall, where the executioners tied her hands, stripped her naked, placed a cap made in the form of a sugar loaf and ornamented with feathers upon her head, hung an appropriate inscription upon her back and then took her out to a rock in the middle of the river. There she was compelled to enter a cage which was plunged three times into the water. Following this punishment she was conducted to a hospital where she was forced to spend the rest of her days at hard labor. In Bordeaux and other places these same rude devices were employed to terrify the people from profligacy (Mayhew).

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In Naples before the 13th century the procuress was punished by amputation of the nose, identical with the punishment inflicted upon the adultress. King Frederick decreed that all persons employing liquors or aphrodisiac drugs for the purpose of facilitating seduction should be imprisoned, with death as a further punishment in the event of grievous injury following the use of such agents. Notwithstanding the severity of the Neapolitan code as applying to prostitution, the condition continued to spread until at the end of the 15th century Naples was hopelessly mired in its own cesspool of wantonness. The Ruffiani, through whose efforts the ranks of prostitutes were kept filled, became bolder and yet bolder in their operations until their organization became a national scandal. They pursued their prey with such relentless fury that in those instances where girls failed to succumb to the milder inducements of these practiced seducers and procurers, the poor creatures were seized upon the streets and actually forced into houses of ill-fame. In answer to the demands of a populace aroused to a desperate pitch the authorities at last banished the Ruffiani and threatened with the branding iron all women harboring them.

As we go further into our subject we come to the penalties prescribed by the Castilian King, Alphonso IX against the Ruffiani, and as we read this code we cannot but wish that it were possible to apply it to the infamous cadets of New York, Chicago and other American cities. We believe an efficiently enforced code of similar severity would more quickly abolish the white slave traffic, now one of the scourges of our land, than our present penal code which confessedly is not rigorous enough even when thoroughly enforced. Alphonso's laws which were promulgated in the second half of the 12th cen-

tury, in their application to prostitution provided for evil doers as follows: I. Men who trafficked in debauch; they were expelled from the country. II. Speculators who rented houses to bandoned women suffered confiscation of property, and were heavily fined. III. Men and women who conducted establishments of ill-fame and hired out women; if the women thus utilized were slaves they could make a successful demand for their freedom which the courts were bound to confirm; if they were free women their corruptor was, under pain of death, forced to endow and place them in a position to marry. IV. Death was the portion of the man who connived at the prostitution of his wife. Death was also the penalty for the seduction of an honest married woman into prostitution. V. Girls who supported men on their earnings were publicly whipped and deprived of the clothes which they wore at the time of arrest. The men were for the first offense severely flogged; for the second flogged and expelled from the city, and for the third offense sent to the galleys. Evidently even these measures, sufficient as they seem to us, were later deemed to be ineffective, for between 1552 and 1556 still more heroic punishments were employed to discourage male parasites from subsisting on the earnings of fallen women. Thus, at the first conviction they received a sentence of ten years in a galley chained to the oar. For a repetition they were given two hundred lashes and condemned to be chained to the oar for life. If only we could use this code in these days!

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As if it needed but the royal command to abolish vice, Charlemagne at a time when prostitution began to creep into his land, issued a prohibitory edict. He ordered that a strict census be taken throughout his possessions and the condition of every female be severely inquired into. He purposed in this manner to expose for prosecution those women engaged in the sale of their bodies. Men found to be harboring prostitutes were compelled to carry them on their shoulders to the public whipping place, where the women received their punishment. In the event of refusal on the part of the men, they too, were to be flogged. At this period it was held that no disgrace quite approached that of being forced to carry a fallen woman on one's shoulders to the place of punishment. But prostitution went on unabated. During the several centuries following Charlemagne's reign immorality clogged the land's very air. Every town suffered the multiplication of public women. Paris became as one great brothel. Harlots thronged the streets, soliciting men most shamelessly, even abusing those who refused to purchase what the women had to offer. It was said that a school and a brothel might often be found in the same building. Finally prostitution became such a national calamity that those in authority made herculean efforts to stem its growing tide. Beginning in 1254 a series of rigorous edicts were issued and at least some effect of the legislation became apparent. For a few hundred years the evil was held in check, but along in the early part of the 15th century with the breaking out of the numerous wars between jealous kings and princes, the scourge in all of its old-time pestilential virulence again broke forth and went on for a hundred years unchecked. In 1503 the authorities sobered by a realization of the inevitable consequence of nation-wide prostitution, created a commission for the purpose of deliberating on the evil and attempting some sort of a solution of the problem. Various laws were passed but they were of little avail, for what sentiment favored their enforcement was not sufficiently strong to cope with the unbridled immorality of a people gone sexually mad.

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Rome's profligacy throughout all ages has been ever one of its reproaches. In the 11th century a church and a brothel stood side by side. In the 16th century under the pontificate of Paul II, prostitution was in just as thriving a state, and this notwithstanding the prohibitory legislation which had been enacted. Some of this legislation was of the severest type, yet the authorities winked at violations. Thus, one law relating to procuring provided a heavy fine for selling a girl into prostitution, and further provided that if at the end of ten days the fine remained unpaid the guilty person was to have one foot cut off. In face of this and other laws which provided tortures, flogging, branding

and banishment, public looseness continued, the people of all classes, nobility as well as the simple folk, being given to every sort of excess. Some of the laws of this early period making for the security of female virtue are most interesting. Curiously enough early Spain had a law which protected public women against violation. In Naples, under William, rape was punishable by death but the victim had to prove to the court's satisfaction that she had shrieked for help in her loudest voice at the moment of the assault. Furthermore, she had no redress unless she began prosecution of her assailant within eight days after the attack. In the same Kingdom once a woman had adopted a wanton's life she could not refuse to submit herself to any man making a demand upon her.

Mayhew who has inquired deeply into the subject of prostitution tells his reader of one of the most shameless legislative acts ever enacted. It was operative several hundred years ago in Rome and in effect secured for convents a share in the abandoned woman's savings. Every person engaged in prostitution was compelled to assign one-half of her property to a convent. However, this act was easily eluded and soon became non-effective. At the same time a tribunal was established having jurisdiction over houses of ill-fame, upon which a heavy tax was levied, this continuing until the middle of the 16th century. All of the Italian cities endeavored to segregate their prostitutes but as might be expected, with little success. The women with their parasitic criminal following took up their abode where they chose, oftentimes selecting favored residential sections. One particular street in Naples became such a notorious thoroughfare for women of this calling that the authorities finally could tolerate the immense throngs of prostitutes, Ruffiani and general followers of this life, who made the section hideous with their clamor, no longer and in 1577 ordered the underworld denizens to evacuate this street within eight days under pain of the scourge. One example of genuine interest shown in behalf of fallen women and which really did protect them from the heartless scoundrelism of their male companions and the cupidity of the proprietors of evil resorts, is to be found in a law of 1479. Men oftentimes took girls into these resorts and ran up enormous bills for entertainments, then non-chalantly quitting the place left the unfortunate girls behind as security for the account. The girls were given their choice of a severe public whipping or forming a connection with the establishment which virtually amounted to slavery, for the keepers took good care that the girls never extricated themselves from the debt. It is not inconceivable to us that at that time such a practice was entirely possible, for we have but to remember that a somewhat similar form of slavery exists in our own period in many an American city, towards the suppression of which the white slave societies are bending their very best efforts. But according to the provisions of the new act of 1479 the keeper of one of the resorts could give a girl credit for a small sum only and this had to be for actual necessaries. If he exceeded the legal amount he had no means of collecting it, and thus the practice was finally broken up.

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But let us quit voluptuous Southern Europe and pass up to the sturdier people of Germany. It is highly surprising to learn that Strasburg in the middle ages was as deeply saturated with vice as perhaps any city in Europe. Mayhew relates that in Strasburg prostitutes at one time became so numerous that, notwithstanding that a special district had been given over to them, they swarmed throughout the city, even invading the finest streets of the city. At least 57 resorts were to be found in six streets alone, on one of which there were 19 houses. The white slavers traveled abroad through the rural districts luring the prettiest girls they could find into the city where they were kept in bondage and rented out. Our authority further declares that at the beginning of the 16th century public morals were so badly corrupted that the less attractive girls found retreat in the clock-towers and aisles of the great cathedrals and churches. This finally became such a public scandal that in 1524 an ordinance was passed directing these "cathedral girls" or "swallows" as they were called in the time's vernacular, to vacate their sacred abode within fifteen days' time. When the Reformation struck Stras-

burg the city was absolutely wretched in the depth of its degradation, but under the influence of the new religious fervor a realization of their utter shamelessness came to the town's inhabitants, and they left off their sensual pursuits awakening to the fuller joys of intellectual and moral betterment. In 1536 but two of the one-time many brothels remained within the city's boundaries, and four years later, in testimony to the all-powerful influence of a public conscience fully awakened, not a single bawdy house was to be found in all of Strasburg. Ten years later the city fathers, probably noticing a drift toward the old condition, proposed to open one officially controlled house but the measure met with vehement opposition and it was not until in the fourth year after the beginning of the agitation for a licensed house that one was finally opened.

A HOME HOSPITAL TUBERCULOSIS EXPERIMENT.—Results of a year's experiment in the home treatment of tuberculosis in the Vanderbilt tenements, conducted under the direction of the New York Association for Improving the Condition of the Poor, would indicate that consumption can be cured in congested districts of a large city and that too at an expense less than in the ordinary sanatorium.

The experiment carried on during the past years is the first of its kind. It has been called the Home Hospital, because it provides a home for all of the members of the patient's family and in addition, all the advantages of hospital care for the consumptive himself. The hospital is located in the East River Homes, built by Mrs. W. K. Vanderbilt especially for tuberculous families. Twenty-seven families consisting of 135 individuals were treated during the year. Six of the families have been rehabilitated physically, socially, and economically, and five have been discharged as not suitable for the experiment. Out of the 135 individuals, 79 were patients, the average number of patients being 2.92 to a family. The report shows that the average residence at the hospital was 233.3 days and that the average gain in weight of each adult patient was 9.9 pounds. Of this group 61 per cent. were apparently cured. 22 per cent. had their disease arrested, and 11 per cent. were much improved. Of the 65 children under care, 16 were consumptive, 18 were suspicious cases and 27 were excellent candidates for the disease. Without exception every child gained in weight and in resistance to tuberculosis. An open air school and roof playground is provided for the children.

The report would also indicate that the cost of treatment per patient compares favorably with that in the best sanatoria of the country. The experiment, however, has been one not only in the treatment of tuberculosis but in the treatment of poverty and dependence. The results seem to show that the actual cost to the community in caring for families of this character is less at the Home Hospital, than if certain members of the family who have tuberculosis are sent to an institution and the remaining members of the family are cared for in homes, asylums, or elsewhere. The total cost of the experiment for a year was $20,217.08, which is $8,229 less than the estimated yearly cost under ordinary present methods.

The experiment, which was conceived by John A. Kingsbury, New York's new Commissioner of Charities, while he was director of the association, will be conducted for at least two more years, in an effort to demonstrate finally the practicability of this method of treating poor families having one or more tuberculous members. Commenting on its possibilities, Dr. Livingston Farrand, Executive Secretary of the National Association for Study and Prevention of Tuberculosis, says, "It is a promising attack on the most baffling of the problems connected with tuberculosis and is likely to prove a contribution of the very highest importance."

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PROBLEMS WITH THE INSANE.

By L. VERNON BRIGGS, M. D., President of the Medical Staff, Boston Dispensary; Member of the Massachusetts State Board of Insanity; and Commissioner of the Alien Insane of Massachusetts.

I feel more and more, as I write of the mentally ill, the temptation to eliminate the word "insane." That word really conveys no more idea of the condition of our mentally ill than does the word fever convey to us any particular form of disease. Fever at the present time is considered only a symptom or consequence instead of a disease, with different manifestations, as was the case many years ago. Up to the present time the word "insanity" has, to a great extent, been used as comprehensively, or loosely. I believe that this society would do well to take some action tending to eliminate the use of the term, "insane," as connected with hospitals and their patients. If mental conditions are (as most of us expect will soon be proved) only symptoms or results of physical disease, the terms insane, mentally ill and mental disease will have to be done away with, and the illnesses from which the individual suffers, such as tabes, syphilis, pneumonia, typhoid fever, general paralysis, autointoxication, etc., will take their right places in our diagnoses. Certain forms of disease will then be classed as irresponsible and commitable which will more clearly define the medico-legal case.

The construction of most of our present institutions for the mentally ill does not allow a proper classification. The result is that in most States, including Massachusetts, one finds under one roof acute and chronic patients, insane criminals, epileptics, feeble-minded, alcoholic and insane alcoholics, senile dementias and moral degenerates, and often several of these classifications in the same ward.

We should not foist the criminal insane on our unfortunates who are sent to the state institutions. The criminal insane should be a class by themselves. They need different treatment and supervision by men who have different training than that required for the non-criminal. We are too far advanced in the treatment of the so-called insane to continue any longer with such heterogeneous groups to handle. If we are obliged to use our existing buildings, we should classify our patients, so that different classes should occupy different wards; for instance, there should be a group of the hitherto so-called early cases of dementia præcox in one ward, where intelligent work could be carried out by re-educational methods, such work as is now being done by Dr. LaMoure at our Gardner State Hospital. Other groups should be made so that each particular group may receive in its own ward the most skillful treatment tending toward improvement or recovery—more individual treatment.

While there should be a variety of occupation in each hospital to meet the therapeutic needs of individuals, every hospital should tend to excellence in one industry. In this way many patients who would otherwise be thrown into occupations in which they were previously engaged would be trained in other occupations, which would be more diverting to them and of more therapeutic value. At the same time the other institutions could depend upon certain hospitals for certain supplies, and each would feel an interest in supplying to the other institutions a certain product.

There is no question but the mentally ill should be treated as all other sick people are. They should not be sent to different parts of the state in isolated communities and for-

gotten, but be where they can receive the visits of their friends and relatives.

The public are now demanding that they shall receive active treatment with a larger percentage of cases discharged as cured or improved. They are not going to be longer satisfied with safe custody, or even comfort, kindness and skillful management.

Dr. William L. Russell says: "During the past twenty years a great change has taken place in the standards and methods and the public is rapidly learning to expect something more for the inmates of the institutions than simply safe custody, comfort, and kindness." Broader medical training and more elaborate equipments are necessary in the hospitals for the insane than for treating simple surgical and medical diseases in the general hospitals, instead of the reverse, which is now generally the case.

The rules and regulations of hospitals should include increase of salaries of the medical men according to their development and length of stay. They should be allowed to marry and have home-like surroundings. These are among the inducements which should be held out to prevent the continual vacancies from which almost every staff suffers, and which means loss of efficiency.

In many states the superintendent, who is a physician, is the chief executive, does the purchasing, has charge of the new construction, and is so occupied by other necessary administrative duties that he has but little time for medical work. While the superintendent should be the chief executive, the business end of the institution should be so provided for that most of the superintendent's time would be given to his medical work.

An efficient purchasing bureau for all the hospitals, if properly run, should lessen the cost of supplies and increase their quality. It is true that a good many superintendents can keep track of the market and take advantage from time to time of the fluctuations, but this should not be the work of the superintendents. I wish to lay great stress on the fact that the superintendents, if they are the medical heads, should do the medical work, and not be business agents.

The present system of large, unwieldy institutions under one superintendent and often inefficient workers results in an economic loss and means that the taxpayers have to suffer.

One or more large training schools for nurses and attendants should be established in each state, or perhaps in each hospital, where the entrance examination should be at least the equivalent of a high school diploma. The student should receive a small salary and contract to remain while training. A diploma and a position in a state hospital with a competent salary, and with suitable accommodations, should be the inducements for such training. The results of such a service would be soon noticeable in the improved condition of patients, by a less number of employees required, and with fewer assaults, etc.

If private patients are admitted to public institutions, either they should receive no different accommodations, treatment and food from the public patients, or else they should be entirely separated from the public patients, housed in a house or houses in a different part of the grounds, with one or more physicians from the staff especially assigned to them, as is the case at the great Am Steinhoff Hospital in Vienna.

Each state should establish a psychopathic hospital and school where physicians who have had no previous experience in the care and treatment of the insane, but who intend to take positions in the state hospitals, should be required to attend certain prescribed courses. This central training school should be able to supply vacancies which are now difficult to fill.

There should, I believe, be a central laboratory, preferably at the psychopathic hospital in states that have one, where the pathological work of the hospitals could be carried on. In this way duplication of expense would be avoided, and more accurate and comparative work would be done. This does not mean that the state hospitals should not do some laboratory work.

The imposing type of institution built in blocks and from three to five stories high at a cost of from one to five thousand dollars per capita is, I am glad to say, becoming a thing of the past. The factory type should never again be used. Smaller and more home-like buildings are becoming popular,

and I hope the cottage plan will continue to gain in popularity.

The modern institution for the insane should be so arranged that the reception service and hospital building for acutely sick should be separate from the rest of the institution; of fire-proof construction and not over two stories in height. An infirmary building should be provided of similar construction. Small buildings for very disturbed cases are needed, so planned that the excited patients should not disturb one another. These buildings should be homelike, attractive, and of colonial or some pleasing architecture.

I believe with Dr. Adolf Meyer in redistricting, and in the building of smaller hospitals serving the communities in which they are situated.

If plans now pending in Massachusetts are carried out for custody of defectives, of which there are probably as many as there are insane in the state, most of our older institutions could be used to advantage for them, and new hospitals for the mentally ill, of from 800 to 1,000 as a maximum, could be built on the redistricting plan. With hospitals of more equal size distributed through the state, a better classification of salaries, rules and regulations would be possible, and a more highly educated type of person could be secured to nurse and care for the patients.

The time has come when each community should take care of its own, as Dr. Meyer is advocating in Maryland. He says: "There should be a more circumspect distribution of hospitals over the state, according to centers of population, and not merely according to cheapness of the land or possibly political consideration." "But here, again," he says, "we find an interesting fact: that the counties remote from the existing hospitals have fewer cases discharged and sent home than those nearer the hospitals." "Lack of interest, if it exists, is due merely to ignorance of the facts, to the tendency to institutionalize psychiatry, to consider it merely the business of asylums, and to forget that mental disorders often take months to form before they come to the notice of state authorities—months in which the most important chance for work should not pass without help from experienced quarters." "We must attack things in concrete cases, and in this respect the district idea, and the idea of small hospitals responsible for the health of their districts, must be the ideal policy of the state and the community." * * * "Instead of going on building large hospitals, with their pseudo-economy, we must aim to give well-defined districts what they need, not only to mend, but to prevent a gradual increase of burdens. A sufficient number of small, live, active hospitals, from which work can be done on the spot and according to the needs of the locality, means infinitely more than a few huge asylums and monuments of resignation, no matter what excellent work is done within them. As long as they fail to reach out, our hospitals for the insane are standing approvals of fatalism concerning faulty ways of conduct of life."

Opening the hospitals and judiciously inviting the public to more freely visit them, and educating the public through the social service and eugenics departments, and by papers or lectures read by the staffs, to gatherings in the communities, even having hospital visitors from the community, will tend to educate the public in the right direction.

An out-patient department connected with each hospital, though not necessarily on the grounds of the hospital, and the payment of small salaries to the trustees, composed of scientific as well as business men, who would be chosen from active lives, will tend, we hope, toward the solving of many problems.

As Commissioner of the Alien Insane of Massachusetts, I feel more strongly than ever that the alien insane are a problem of greatest importance. They form a very considerable part of our whole insane population. The work of the New York commission and others should be followed by every state and memorials and committees sent to Congress to urge better laws and treaty obligations. I hope we shall receive a valuable report at this meeting from the committee appointed last year. Government hospitals should take care of the aliens who are now taken care of by the several states for humanitarian reasons or because there is no other course open to them.

Gov. Foss of Massachusetts, sent a special message to the legislature this spring, urging Social Service Work as follows:

THE COMMONWEALTH OF MASS.

Executive Department.

BOSTON, May 5, 1913.

To the Honorable Senate and House of Representatives:

I transmit herewith a letter from Dr. L. Vernon Briggs, of the State Board of Insanity, urging the necessity of more effective supervision of the families of the inmates of our institutions.

In this connection I would draw attention to our present failure to accord adequate protection to the dependent wives and children of men who are shut up by the state in our institutions, whether because of crime, sickness or insanity.

Our institutions are conducted primarily for the protection of the public. At the same time, our system ignores very largely the fact that, in removing the bread-winner of a family, we expose that family to the very conditions of destitution and helplessness which are most of all conducive to crime and permanent pauperism.

We are, for example, sentencing drunkards to long terms of imprisonment, clothing, feeding and housing them, and giving them expert medical service. In a majority of cases these men possess some wage-earning capacity, but in shutting them up we permit their families to be turned out on the streets, to get what they can from public or private charity or both. The time will come, in my judgment, when we shall recall this present practice with profound humiliation.

After mature consideration of the various classes of persons confined within our institutions, I have come to the conclusion that we should first of all consider the dependent families of those who are confined in our insane asylums.

Moreover, every step which the commonweath can take to relieve our institutions of any of their charges and make them self-supporting and useful members of the community should be taken at the earliest possible moment; also every possible step toward the after-cure of our mentally ill and the prevention of such illness.

These steps are requisite in view of the crowded condition of our institutions and the increasing demands for additional buildings.

I am informed on the highest authority that our present policy is leaning too much in the direction of merely shutting up mild cases of insanity.

In other countries—notably in Scotland—public policy has established a system of removing mild cases from the institutions and finding suitable private homes in which they may be cared for.

While we are now making, to a very limited extent a somewhat similar provision, I have become convinced on the testimony of officials connected with our institutions that we could probably discharge from five to ten per cent. of the insane now confined in the institutions of the commonwealth if we maintained any adequate means of locating them either in their own homes or in other places in which they could be boarded out.

I would, therefore, direct the attention of the legislature to the recommendation made by Dr. Briggs in favor of the establishment of a so-called social service to be conducted by the state under the supervision of the Board of Insanity.

Social service as understood and practiced elsewhere today aims to furnish friendly advice and co-operation on the part of the state for the benefit of the wives and children from whom the wage-earner of the family has been removed through the operation of law. For example, a mechanic becomes suddenly afflicted with some form of insanity and public safety demands his immediate seclusion in an institution. Surely, the commonwealth owes some obligation to the wife and children who are thus suddenly and without any provision or warning deprived of their means of support.

In many instances friendly counsel and advice in regard to the economical organization and conduct of the household, or in respect to securing positions for the wife, and the children of proper age, would be sufficient.

Moreover, many insane people retain sufficient reason to brood over the helplessness of the families from whom they have been removed, and whom they have been forced to leave without protection. This fact in itself may be sufficient to preclude the hope of a cure in many cases.

I believe that social service work should also be established with respect to the families of our prisoners, and that the latter should be more efficiently occupied in productive labor.

I have repeatedly called public attention to this latter consideration, and am confident that the pending reconstruction of our penal system will result in the establishment in Massachusetts of these much-needed improvements.

I transmit the accompanying letter from Dr. Briggs, and with it the draft of a proposed statute, in the sincere hope that this Legislature will take cognizance of the conditions herein set forth, and will make a beginning, at least, toward an ultimately complete provision for the protection and assistance of the families of our insane, in all cases where other than public means are lacking.

If we continue to ignore the possibilities of this modern method of providing for the insane, we must continue to make rapidly increasing appropriations, as at present, for the permanent State custody of practically all cases of insanity within the Commonweath, however mild the form of the disease may be.

(Signed) EUGENE N. FOSS.

THE COMMONWEALTH OF MASSACHUSETTS.

BOSTON, April 25, 1913.

Governor Eugene N. Foss, State House, Boston, Mass.

My Dear Governor Foss:—While the present legislature is in session I hope you will present to them the need of taking some action toward definitely and intelligently stopping the increase of the state's dependents. Up to the present time the state has in the main devoted its resources to housing propositions so far as this class is concerned. I feel that the commonwealth should now take immediate action toward the prevention of the constant increase in this class who are multiplying faster than we can build institutions to accommodate them.

Social service properly organized is our first great step. This does not mean a body of untrained volunteer workers untactfully entering the homes and grappling with the private affairs of our citizens, but a body of trained workers without regard to sex or creed who experience has proved are welcome in every home and community in our land. They can do as good or better work among the mentally ill than is now being done by an army of faithful workers to stamp out tuberculosis throughout the state.

One or two of our state hospitals are doing some work along social service lines and one or two are doing some work on eugenics, but there is no organized work and no means have been provided for organizing and carrying the work out properly.

If the state would provide the small amount of money necessary to organize this year it would be saved the care of a good many dependents who will have to be taken care of the rest of their lives if we delay another year.

Sincerely yours,

(Signed) L. VERNON BRIGGS.

Social service should be connected with each institution. If properly organized such a service will improve home conditions throughout the state and prevent many duplicate commitments from the same family or environment. It will also facilitate early discharges by making a survey of cases in the hospital and a survey of the community conditions into which such patients will be discharged, that the paroled or discharged patient may be placed in the most advantageous surroundings on leaving the hospital or as being transferred to what should be an ever-rapidly increasing group. I refer to the boarded-out patients. The follow-up work and after-care of the discharged cases to prevent a return to the hospital would greatly reduce the recommitments which now amount to a considerable percentage of our so-called insane population in institutions.

Money should be spent at the beginning for the prevention of insanity in social service and like instruments. It is just as much a necessity, if not a more crying need than that many thousands of dollars should be spent at the terminal end of the disease in laboratories.

It is obvious that money spent for the prevention of insanity will be a saving of intel-

ligence as well as money to the state, but in spite of this fact, thousands of dollars are spent in housing terminal cases and in laboratories for the study of pathology, and, with two or three exceptions, there is not a state in our Union that is spending any money in organized prevention. In closing my paper I take the following quotation from the Sixth Annual Report of the Trustees of the State Lunatic Hospital at Worcester, Mass., in 1838, of which Horace Mann was chairman. They say: "The great object at the hospital is the cure of insanity or the mitigation of its sufferings. The great object of the state and of individuals should be its prevention. The hospital is succeeding pre-eminently well in accomplishing the former; what can be done by the state and by individuals to effect the latter purpose?"

THERAPEUTIC NOTES.—A hypodermatic dose of 1-50 grain atropine will often check hiccough.

Tincture cinchona, in 10-drop doses before meals, stimulates the inactive stomach.

Small quantities of ice water given every half hour is asserted by Baruch as possessing diuretic properties.

Small doses of magnesium sulphate frequently repeated is of service in the treatment of uncomplicated cystitis.

A ten-parts-per-thousand solution of ichthyol in water, used in gastric lavage, is recommended in treating gastritis and gastric ulcer.

Small doses of sulphurous acid every 2 or 3 hours is stated to possess antizymotic properties which make it valuable in treating scarlet fever.

Tincture Jamaica dogwood, 10 to 15 drops in water every 3 or 4 hours, is recommended as a remedy for mild cases of whooping cough and spasmodic asthma.

The combination of tincture squill, potassium acetate and sweet spirit of nitre, each in proper dosage according to age and condition, is a reliable diuretic.

Szanto applies to well-cleansed chancroids the following readily-made ointment: Salicylic acid, 15 grains; tincture benzoin, 30 minims; petrolatum, 1 ounce. Use freely.

Cutter recommends 30 grains thymol biniodide dissolved in an ounce of sulphuric ether as an application in superficial wounds and abrasions, especially in cases of "cracked" skin.

Chloral hydrate and acetic acid, of each 1½ drachms; salicylic acid and sulphuric ether, of each 1 drachm; collodion, 4 drachms—all carefully mixed—is excellent for removing warts and corns.

The swiftest emetic is not always apomorphine; often copper sulphate is more prompt in action. We knew of a child being almost instantly killed by apomorphine being hypodermatically given as an emetic.

Bulling recommends, as an inhalation in chronic bronchitis, the following: Menthol and eucalyptol, of each 4 grains; oil of juniper, 10 minims; oil of turpentine, 10 minims. Place a few drops upon pieces of blotting paper distributed through the room.—*Medical Council.*

Common green soap is a homely but a valuable remedy in skin cases, being useful in seborrhea capitis and also in lupus erythematosus.

It is a mistaken policy to sacrifice utility to esthetics in the case of ointments. A stinking ointment with a good penetrating base is far more efficacious than the most fragrant salve made up with an excipient that merely dries on and permits of no absorption.

Nothwithstanding the difficulty mentioned by some of finding tubercle bacilli in the urine, with the careful employment of more recent methods they may be detected in 80 or 90 per cent. of cases of renal tuberculosis.

MULTIPLE PROFESSIONAL CRAMPS IN A PSYCHASTHENIC: PSYCHOANALYSIS AND TREATMENT.

By Tom A. Williams, M. D., C. M. (Edin.), Foreign Corresponding Member of the Neurological and the Psychological Societies, Paris; Associate Member of the Clinical Society of Mental Medicine, Paris; Neurologist, Epiphany Free Dispensary, etc., Washington, D. C.

Case F. S. Single woman, aged 29, was referred April 10th, 1910, by Dr. John Dunlop, after the failure of orthopedics and massage to improve an incapacity to write. apparently due to a painful stiffness and cramp of the shoulder and wrist of two years' duration. Several months in the country had also failed to remedy the cramp, although she had gained ten pounds in weight and became much stronger.

Physical examination revealed no organic disease. *She was left-handed*, as was her brother's daughter of two years. The muscles were strong and respiratory capacity was ample, and in spite of hypoptonia, there was no impairment of movement, either in extent or force. Moreover, contractions could be maintained for thirty seconds without fatigue.

But in the act of writing, the wrist stiffened, the forefinger and thumb tightened up on the pen, the hand trembled, and she complained of severe pain in the wrist and between the first and second metacarpal bones. There was not the decided deformity of attitude so often seen in cases of professional cramp; indeed the hand was held in a fairly good writing position, except for a rather too great extension and radial adduction of the wrist. She declared that she was prevented from writing rather by the pain than by the tremor or stiffness.

She did not have the great difficulty of voluntarily relaxing the limbs which I have found in so many cases of professional cramp. It was only in the right shoulder and arm that there was some lack of perfect freedom when passive movements were imparted. There was, however, at first, some uncertainty in performing directed tensions and relaxations of the lower limbs. But I could not satisfy myself that this was not due to embarrassment and imperfect comprehension of what was desired.

The deep reflexes, especially in the lower limbs. were very active, and there was a false clonus. The muscular tonus, especially of the arms, was poor. She had cold and clammy extremities and there was a slight tremor. There was a dry eczema in the left axilla. Sensibility was normal.

She had always been much constipated, with a capricious appetite, which had latterly been ravenous. Every few weeks she had had a severe bilious attack, which pulled her down for a week. She overcame the disability by her will. At school she weighed 150 pounds, which weight fell to 110 pounds at the time of the singer's cramp (see later) until she was twenty-four years old. She was then about 130 pounds in weight.

Much of the previous history was ascertained only after psychoanalysis at various times. As a girl, she was solitary in tastes, and did not care for games. The neighbors' children did not appeal to her; and she stayed much with her mother, her sister being too young to be a playmate. When nine years old she had scarlet fever, and since then had not had much vitality, always ailing, easily tired and readily contracting infections. Both heat and cold tried her much, and she perspired readily, even when not heated. The hands often stung, burned, and ached, and seemed to swell, and the veins stood out when she was cold. When she was excited, the hands reddened. Edema of the eyelids came quickly during fatigue. But there was no history of epistaxis nor angioneurotic edema. There had been no pains in the body, back or sides. She menstruated normally at fifteen years. After a fall at the age of twelve she wore a plaster on the back for three years. At eighteen years the catamenia disappeared for six months, and were afterward scanty, when she was said to be anemic. Sexual desire did not appear till nineteen years, although when fifteen she had been properly enlightened by her, mother.

So sensitive was she to ridicule that a girl who laughed at her at the age of nine years on account of her belief that babies were brought by the doctor still incurred her hatred. She was disgusted with the girl's explanation, and refused to believe it and when her mother confirmed her disillusionment, she felt that she had been deceived and was very distressed, just as when she learned that there was really no Santa Claus.

Among the characteristics discovered in anamnesis were the following: Her diffidence about her singing was increased by the fear that it would make people believe that she was "pushing," as she had seen many do. At one time, her loss of confidence was so great that even the making of her clothing would unnerve her, so that when any thought was required the task seemed like a mountain. She had told her mother that she felt different to others, as she never felt like acting as she saw others do. Analysis showed that this was because she was too self-conscious to speak, for fear of attracting the attention of others, especially strangers.

Lately, she had ceased taking communion, because dissatisfied with herself, religion, and everything. It seems wrong that her late fiancé, who was completely selfish, should be happily married and well, while she was poor and sick. She was ashamed of her apostacy and kept it to herself. She had never been spirtually minded, but always altruistic. A cousin attributed her misfortune to her having danced with men; but she herself rejected this notion, as she never did anything she was ashamed of with men.

She had been brought up to be very particular and reliable, so that she would become irritable and excited if things were not exactly right. Hence, she had always kept a good deal to herself or stayed with her mother. She was rather taciturn, not caring to talk while working. She was not fond of day-dreaming. She thought she had not made what she should of life. What she meant was that she had had to curtail her musical ambitions.

Psychologically she was overconscientious and inclined to melancholy. She said that her torture of mind was hardly describable. She was very diffident, and hardly felt like acting as she saw others do. This she could not particularize, except that she feared to speak when with others for fear of attracting attention. She was ambitious and desired to excel in music, but was handicapped by her poverty on account of her father's loss of work for several years. Thus she could not have a proper piano, and had great difficulty paying for her singing lessons. She felt that she must make good; for she believed herself worthy of a better environment than her poverty allowed.

The Professional Cramps.

It was this state of mind which led to her first incapacity. She had sung in a choir for sometime, and appeared at a concert, but had no trouble with her voice, although she was studying with a master who, she now believes, employed an injurious method. After a concert at which she made her first public appearance, she received an anonymous letter suggesting that she would have looked better had two inches been removed from the neck of her corsage. She never found out the author, and it greatly added to her self-consciousness, as she feared that any of her friends might know of the insult and every time she sang she thought of it with a feeling of immodesty. In consequence a painful contraction of the pharyngeal muscles occurred, especially when she sang a high note or a solo as these drew attention to her. Then the tongue began to stiffen at the same time and a severe cramping pain would occur in the throat.

The cessation of menstruation she believed to be a sign of consumption, which she much dreaded, as she had been at the death bed from that disease of her only girl friend; and one of her cousins and three aunts had died from it. She knew that tuberculosis could affect the throat; and was indeed told that her own trouble might be consumption brought on by the strain of singing while she was physically unfit. Eventually, the cramp would occur even upon talking, especially when several people were present and she was tired.

Five years ago, she ceased singing, as two years of treatment by a laryngologist failed to improve her; but some time later she recommenced singing in the choir, although she could not manage a solo. In the choir, she met the leading tenor, whose voice she

greatly admired. They became engaged; but although intensely fond of his person, her better judgment acquiesced in her parents' advice not to marry him, because of his careless habits, intemperance and irresponsible behavior. After four years she gave him up; but the strain of doing so was very great. She had always suppressed her feelings with him for she feared to succumb to his advances; and her feeling of right and wrong would not allow her to do so; and she is proud of succeeding; for she believes few girls could have withstood. He made her life miserable by trying to take advantage of her, though he had fine feelings otherwise. Her endeavor to appear indifferent after the rupture wore on her, but she eventually threw off what she calls an obsession of her life. Sexual desire was excited only when with him, it never occurred in his absence, even in dreams.

Onset of the Writing Cramp.

During the grief of this rupture she had been working at bookkeeping in a railroad office, where great accuracy was needed, as one error would upset the work of a roomful of clerks. Two years ago, she had a severe attack of grippe followed by insomnia, for which many drugs were given. She found half a trional powder would stupify her for two days. On returning to work, she had great difficulty in finishing the day. She felt that this position must be kept, as she could no longer, by singing, earn the money she needed to support herself, now that her engagement was broken. Against the increasing difficulty of writing her daily quota, she struggled hard, but anxiety only added to the physical burden, and she finally succumbed after trying various methods of holding her pen in the effort to write. This process occupied about six months, and ended in a tremor so violent that she had to be fed. She attributed her incapacity to a broken muscle in the shoulder, and hoped that a month's rest would enable her to return to work.

In the course of the investigation, the dreams were searched for; but this line of inquiry was soon abandoned, as the analysis of the dreams which were recalled did not reveal additional complexes of significance germane to the psychogenesis of the writer's cramp.

It appeared that some little time before entering the railroad office, she had been subjected to a violent shock, through the suicide of a sister-in-law with whom she had been staying, and with whom she had not got on very well, believing herself somewhat unfairly treated by her. It is possible that this increased the predisposition to writer's cramp by exalting the nervous anxiety with which she entered the office.

Progress of the Case.

After a month's treatment by a succulent diet, constipation was greatly improved. Writing was possible without constraint when made large and round, but an attempt to lessen the size failed. The next menstruation was very painful, and the girl became sleepless; also she became very nervous after sewing. She was advised to relax, and thyroid extract, one grain thrice daily, was tried. For some days after this, she was in a torpid state, but could not sleep properly. Epinephrine was added to the prescription. She blamed herself for being in this torpor by letting her disappointment prey on her mind; but she declared that she was now quite indifferent to her fiancé, and disgusted with herself for not having thrown it off.

The reflexes, which had diminished for a time, were now much increased. Great variability in the extent and rapidity of response of the deep reflexes was shown at different examinations. Exaggeration seemed to be in proportion to ill health. But the false clonus found in the early examination never returned; and on the whole there was a progressive diminution of excitability.

After this crisis, she made better progress, being able to relax her wrist and to write the alphabet firmly in letters about half an inch large; but her throat still ached sometimes when singing. The fact that she takes responsibility in the house weighs upon her, and her sister, who does not do so, is so much happier that she is inclined to blame her parents for encouraging her ambition. She has, however, been sleeping better, having walked much, and the constipation has greatly diminished, thanks to the fruit in the diet, but her mind is still preoccupied,

because she is not working, and does not feel able to sit at a desk from eight to five o'clock.

Improvement continued in spite of the unpleasantness of a rupture in the choir where she sang. She showed much acerbity, blaming the director's bad management. Although she is much improved, she is very pessimistic, and thinks she may have a tapeworm, as she is so ravenous. But she had succeeded in sceptically rebutting the argument of certain of her friends who wished her to attempt to apply Christian Science to her disorder. Upon her insistence, I allowed her doctor to give male fern for the suspected tapeworm; this satisfied her of its absence. Her constipation was now cured; but, as she believes capacity to write is unattainable, she is very unhappy.

After the first eight weeks I did not see her so often, and she unfortunately relapsed on account of frequent discussions of her state by well meaning friends, so that toward the end of July she was firmly impressed with the idea that there was a deformity in the hand and shoulder. I disproved this to her with some difficulty, as her attitude was distinctly negativistic. But after this, she fell back upon the notion that she needed something to make her food assimilate. A rediscussion of her digestive difficulties showed her that they were caused by her emotions; and she had to admit that she had improved, for excitement and mental effort no longer caused dyspepsia, though it still induced constipation. She had gained in strength.

But in spite of all reasoning she would feel her hand contract sometimes, even when not writing. I decided therefore that she had not a real grasp of the principles I had been trying to inculcate. Accordingly, I recapitulated them systematically, with great care, and wrote out a summary for her to take home and study. After her next visit, I kept this and asked her to write to me an account of the mechanism of her condition as she understood it. From this account (which follows) it can be seen that she had not even yet transcended the physical explanation, as she referred her condition to disease of brain cells, failing entirely to appreciate that her disability was psychological, that is, a disharmony of acts arising in ideas. It was not that the machine was broken or worn, but that the wrong levers were brought into operation. It would be impossible to overcome the abnormal acts derived from diseased brain cells by any amount of studied indifference or exercise of self-will.

So the following letter was written to her, and she was asked to cease entirely the practice of writing while studying, and trying to grasp the propositions contained in my letter. To do this the better, she was urged to leave home and be absent from habitual influences for a few weeks, during which she was to engage in abundant exercise in the open air. After a few days, she might begin to learn to write with the left hand. When she had clearly grasped the principles which I had explained, she might begin to practice with the right hand. Preceding this, I had seen one of her friends who gave me the following account:

F. S. is selfish, and, perhaps, ashamed of her mother, who has indulged and spoiled her sister. They forget that F. S. is ill and do not excuse her peevishness. The shame is due to her mother's ambition for her. She has always had to help her family; and her sister, a girl of nineteen or twenty, has not had to do so, and she considers this unfair.

She is snobbish, and her mother is worse. She does not want to have to depend upon relatives when her parents die. She does not practice writing much, nor exercise (why?). "I did not see much use." She does not grasp the psychological idea, and was disappointed not to find a tapeworm. People imply that she is a failure because she is not married at twenty-eight, and cast up her support to her.

She wishes very much to be engaged or married; and if she is not engaged soon, she thinks there will be no hope for her.

To pursue the analysis, I gave her a paragraph in a newspaper to read about the cutting of his wife's throat by a man who thought it a disgrace for her to work. She said: "It is like my thoughts, and it pains me; such queer ideas."

It was then that she was directed to dictate as accurately as she could my explanation of how and why her arm went astray in writing and other acts. She said she could not, making many excuses, and when

asked to consult her friend with regard to suitable work, she made the excuse that she was going away down the river next month, and it was not worth while beginning. She was much exercised over what proved upon examination to be the long tendon of the left biceps slipping over its ridge. She kept always referring on the physical aspect of her case. On August 5th, she could not comprehend why her hand still contracted when no mental stress was apparent. I explained again that it was habit, just like the character of any one's walk, gestures, and so on.

She said: "Why do my hands tremble when I seem so well today?" So I made her hold them out, and a rapid oscillation of the right hand was shown. I made her count twenty while looking at me; it ceased. I made her look at my hands spread steadily before me; her trembling again ceased. Then I explained its mental nature; and that a tremor of organic origin could not be stopped like this. She as last was convinced.

The patient's own explanation of the mechanism of her affection was as follows: "An abnormal condition of the mind produces certain phenomenal results. Practically the same brain cells are in action when writing or sewing. Through certain physical conditions, these particular cells have become diseased, and instead of performing their functions properly, they create abnormal acts. When this condition has become chronic, it can only be overcome by exercising self will and by studied indifference to all matters."

My reply to this was embodied in a psychotherapeutic letter as follows:

Your account shows, as I half expected, that you have by no means an adequate conception of your own condition. As you require that, in order to attain perfect recovery of health and usefulness, I try to place it before you now as simply and clearly as possible.

First, it is an error to say that your "brain cells have become diseased." There is no disease of your cells: there is a disorder only of the harmony of action among them in writing, etc. This originated in the extraordinary efforts to accomplish much during a time of fatigue and mental distress. It was the difficulty of doing this which caused the unusual attitude of the hand, which arose from conscious effort to perform what was beyond your staying power. The tightening of the muscles was "mental." The habit of wrong writing was thus engendered and it is this which now persists as an automatism. That is to say, when you are not paying attention, the hand of itself is guided by the mind unconsciously into these perverted positions.

But even when attending, there is an inclination to fall into the very position you desire to avoid. This is partly due to its habitualness, and partly to the natural tendency of many persons to perform the very act they most wish to avoid; the familiar example is that of the cyclist to collide with the obstruction he sees in the road. By practice, this tendency is soon overcome.

So you see that the abnormal acts are not the result of disease of the cells; but are merely bad habits to be overcome in the same way as those of the learning of the piano or of any act needing mechanical dexterity.

It was only after this that rapid improvement occurred, and the writing, though a little large, became perfectly normal. Perfect ease, however, was not attained although she did a good deal of clerical work intermittently, and was ready to take a position demanding it continuously, knowing that if the right hand failed the left could take its place.

After this almost complete recovery, the patient ceased attendance, but she saw me from time to time, and maintained the hygienic life that she had been taught. As a result, she was, one year ago, in better physical condition than she had been in for years, and was able to walk long distances and to do hard housework without fatigue, whereas formerly, she was tired out by walking a few squares or by any hard work. But that the restoration of her physical health was not the cause of her partial recovery from writing cramp, is proved by the relapse of the latter, in spite of continued improvement of her physique. This relapse is due to circumstances which have compelled the cessation of the re-educative training. She writes so much worse than she did six months ago, that she has quite given up practicing for the present; but when circumstances permit, the lessons will be resumed, and I believe that the capacity will be restored.

The patient has now learned dactyliography and is in a position of trust which she most enjoys. Her health gives her no trouble although she does no actual writing with the right hand. We have recommended psychomotor discipline. Her morbid fear is not altogether gone, however. In the fear that in the future her arm may refuse to work the typewriter. But her success has hitherto reassurred her.

Interpretation of This Case.

Both the incapacity to sing and to write are alike explicable as tic. F. S. could not sing because the relaxation of the pharyngeal muscles needed for good tone production was interfered with by the emotional contraction of them, which resulted from dwelling upon the shame created by the anonymous letter. The struggle between her shame in singing and her desire and need to sing accentuated the difficulty still more.

The fact that cramp occurred later, quite apart from professional use of the voice, is paralleled by the case of E. L. and by her own eventual incapacity to feed herself as a result of a professional cramp and tremor of the right arm. This shows that the mechanism of these cramps is not strictly professional at all. The mechanism of the writing cramp consisted in the desperate effort to perform work while she was in an unfit state of health. The act of writing became impossible because no muscles relaxed to allow of the necessary interplay. The intense contraction, at first purposive, became associated with the attitude of writing. Its mechanism was almost automatic; so that when the cortex was stimulated by the need to write, the innervation inevitable was that which caused a cramp instead of the co-ordinate act of attempted writing.

The pain, both in the throat and the upper limb, was due to the intensity and prolongation of muscular contractions; it is that of cramp, and is familiar enough. The residual and almost constant pain is partly of the kind described as stiffness experienced after severe and prolonged exercise. It may be partly psychological; but this was not determined, as I wished to withdraw the patient's attention from the pain as much as possible.

ON TEACHING FOOD VALUES.—Medicine in the future will, to a great extent, resolve itself into foods and the chemistry of cooking. There is a woeful lot of ignorance among the laity regarding the nutritional value of foods. It is up to the doctor to lend a hand in educating those who stand in need of such help.

For example, let us consider prepared breakfast foods. They are wholesome and handy to serve, but represent low nutritional value—therefore economic waste. The cheaper cereals, if *well cooked,* are as good as ready-to-eat cereals. Cereals, especially oatmeal, require thorough cooking in order to bring out all their nutritional elements and render them easy of digestion. The fireless cooker is a valuable aid in preparing the cereal breakfast, especially where there are children in the family. The oatmeal or other cereal can be brought to the boiling point in the evening and allowed to simmer all night in the fireless cooker.

A home-made cooker can be produced for a few cents and no skill is required in its construction. The writer attended a Child Welfare Exhibit recently where a home-constructed cooker was on exhibition. Every evening a number of boys went home and made cookers which were "just as good."

While most parents realize the value of milk for babies, yet many lose sight of its nutritional value in older children. In order to get a good grasp on a few relative values the following table of comparisons should be studied:

One glass of milk equals—
One-half pound of potatoes.
One pound of cabbage.
One and one-half pounds of celery.
Two and one-half ounces of beef.
One and one-half ounces of macaroni.
One ounce of dates.
One large egg.—*Medical Summary.*

THE PROPER TREATMENT OF RHEUMATISM.

By WILLIAM H. GREGORY, M. D., Berea, Ohio.

Of all diseases that do not take life, rheumatism in its various forms probably causes more long continued suffering and more time lost from work or business than any other. In its ultimate results, rheumatism is very frequently productive of fatal results, by means of the organic heart disease to which it gives rise. To thoroughly understand rheumatism, and its causation by means of insufficient elimination and autotoxemia, it is necessary to study it in combination with its related diseases or the other members of the "band of outlaws" who are often found in company with it. These are spasmodic or bronchial asthma, sick headache, and acute or rheumatic tonsillitis. This is not quinsy by any means but an angry looking dark red throat, which is not greatly swollen, but is very painful, also very stubborn and long lasting, being not self limiting, by any means, like the other varieties of tonsillitis.

When I say that retention of uric acid is the chief cause of rheumatism and its allied diseases, I am simply naming the best known member of a group of toxins. The patient with sick headache, asthma, or rheumatism has certainly been retaining a large amount of uric acid and other poisonous waste matters through lack of sufficient activity on the part of the liver, kidneys, bowels, and skin; naming them in the order of their importance. If you do not treat your patient's liver thoroughly and successfully, and in a way to bring it up to normal activity, you will never cure him of his rheumatism.

Don't, don't, don't *ever* give an adult calomel in a case of faulty elimination, torpid liver, or retained waste matters. Why should you, when you have the choice of such liver remedies as podophyllin, iris versicolor, chionanthus, chelidonium, eupatorium, hydrastis, leptandrin and taraxacum?

In the systematic treatment of rheumatism there are two things of equal importance, to relieve the pain, and to remove the cause of the trouble. Of all true rheumatism remedies, bryonia probably will relieve more pain than any other one remedy. It should always be given in the form of the specific medicine, and should be given in combination with a heart sedative and a glandular remedy. A very good prescription for an acute case is specific tincture bryonia, gelsemium, veratrium iris versicolor or rhus tox.

It is extremely necessary in every case of rheumatism that is at all acute to give some remedy to relax the high arterial tension and quiet the exciting heart.

Specific gelsemium or veratrumviride or both work excellently in these cases. The specific iris versicolor, which is prepared from the fresh root, does all the eliminative work that is expected of calomel, without the dangers or disadvantages of that drug.

Where there is no contra-indication to forbid its use, I usually alternate 5 grain powders *of natural* sodium salicylate taken in half a glass of hot water with the above mentioned prescription of vegetable remedies. Where patients by reason of an idiosyncrasy can not take salicylates at all, or where they seem to be immune to any quantity of salicylates, you can cure the most acute and severe cases of rheumatism promptly and thoroughly, by using such remedies as bryonia, gelsemium, veratrum, aconite, colchicene, iris, rhus tox, pulsatilla, cimicifuga, and guaiacum. These remedies are all good eliminatives, and most of them have also a *direct* action in relieving the pain of rheumatism.

The old fashioned remedy guaiacum or guaiae is an excellent eliminative and besides is the very best thing ever discovered to give immediate relief in cases of rheumatic tonsillitis or painful sore throat.

It should be used frequently as a gargle, and taken internally also.

For retention of bile, uric acid, and other poisonous waste matter the gastro-hepatic pills make a most excellent treatment, they contain podophyllin, leptandrin, aloin, hydrastis, capsicum, and gamboge, they are very mild and safe in their action and make

a permanent improvement in the action of the liver and stomach.

For repeated attacks of sick headache, I have found that the natural sodium salicylate given in the form of five grain powders dissolved in half a glass of hot water and alternated with the specific tinctures of gelsemium and iris is almost a sure cure. These sick headache patients have almost complete retention of their urinary solids before each attack and the above mentioned treatment combined with liberal dosage of the gastro-hepatic pills will work wonders for them.

Any doctor who has a chance to see the results of the treatments I have described, the complete relief from pain, the patient's good color, splendid appetite, the excellent action of the liver, stomach and bowels, and the rapid gain in flesh does not require any further argument to convince him of the value of eliminative treatment by vegetable remedies.

FIFTEEN NATIONS TO SEND 6000 NURSES TO THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION AT SAN FRANCISCO.—A tidal wave, white-capped and wide-reaching, is scheduled to overflow the streets of San Francisco early in June, 1915. The force of the inundation will reach its maximum at the grounds of the Panama-Pacific International Exposition; but no one need prepare to flee to the hills. The flood will be a beneficent one—made up of white-capped, polyglot Angels of Mercy—more than six thousand trained nurses; the pick of the great hospitals and training schools of Europe, Asia, the two Americas and the isles of the sea.

Four congresses or conventions of these alleviators of suffering will hold their triennial sessions at the exposition; The International Association of Nurses, representing fifteen foreign nations, including England, Ireland, Germany, France, Belgium, Italy, and others, with Australia, China and Cuba; The American Nurses' Association, with 22,000 members, of which Miss Genevieve Cook, of San Francisco, is president; the National League of Nurse Education, numbering 12,000 members, chiefly educators and superintendents of training institutes; the Organization of Public Health Nurses, with an equal number of members, whose labors have to do particularly with public-health, tuberculosis, settlement work, social service and the like; and finally the California State Nurses' Association, which will act the part of hostesses to the foreign contingent.

Announcement of the coming of these large bodies of women workers—for there is scarcely a man among them—was made by the president of the International Association, Dr. Helen Parker Criswell, on her return from a four months' tour of Europe in the interests of the exposition.

"Everywhere—in Paris, London, Brussels, Berlin, Rome, and in the provinces," said Dr. Criswell, "I found the nurses and the officials of the foreign training schools and organizations full of enthusiasm, for the meeting at the exposition. The attendance from European countries will be enormous; and in addition to the congresses, these organizations are uniting in the preparation of a comprehensive exhibit of all modern hospital appliances, besides an historical exhibit, a model mortuary, and demonstration wards. These exhibits, with the demonstration hospital, will be maintained during the ten months of the exposition. We expect that at least fifteen countries will be represented, with over 6000 delegates. The American branch, of which Miss Genevieve Cook of San Francisco is president, will take a prominent part, as will the two closely allied national nurses' organizations. These are distinct from the Red Cross, which also will hold a congress at about the same time."

CYSTOCELE: MOST EFFICIENT METHOD OF REPAIRING.

By W. T. Pride, M. D., Memphis, Tenn.

Cystocele is one of the most common conditions following repeated childbirths, laceration of perineum and pelvic floor, and general pelvic relaxation. Oftentimes vague symptoms of general discomfort in the woman is due to a more or less pronounced cystocele. Even at times when the symptoms of weight and dragging in the pelvic cavity with a sensation of distension of the vulvovaginal orifice accompanied by some loss of power in urination are present, we never think of a cystocele being the underlying cause. How often do we see a colpoperineorrhaphy without correcting the anterior wall which is really the seat of the symptoms. For years the repair of the cystocele has been just as unsatisfactory, if not more so, than the posterior repair. About two years ago I instituted the following operation which has proven entirely satisfactory, and is based upon anatomical principals:

The anterior vaginal wall is exposed and cervix drawn down. The anterior vaginal wall is now split with scissors from the cervix to within one-half inch of the external urinary meatus. It is very important to cut through the entire thickness of the vaginal wall so as to expose the vesicle layer. The incised vaginal walls are dissected back upon each side, using a gauze sponge, until the lateral true ligaments of the bladder are reached. These can be felt and seen on each side. Using number two chromic gut, sutures are introduced into the ligament of the one side as far down as possible and then across to the other ligament at a like point, two or three others. are introduced successively about one-half inch apart. The sutures are then tied beginning in the order of introduction, this forms a perfect swing for the bladder which is supported from the pelvic wall, and ligaments that will not relax to the extent that the vaginal wall does. There is no narrowing or contraction of the outlet.

The flaps of the vaginal wall need not be cut away, but stitched together with number one catgut. The excess of tissue soon disappears.

1419 Memphis Trust Building.

THE APRIL CENTURY AN ART NUMBER.—Increasing numbers of Americans are interested in painting, and the love of art is no longer confined to a few. The present revolution that is going on in the art world bewilders and distresses a great many people who heretofore have got enjoyment from pictures without being shocked and startled.

The *Century Magazine* is performing a public service in attempting to sum up the present situation in the art world, and to explain the whole sensational movement. As it is the editor's opinion that no one person is capable of a thorough and judicious analysis of this kind, he has gathered about him in this project a group of men of eminence, each with an entirely different point of view. The April *Century* contains articles by these men with more than fifty illustrations, two of which are in full colors.

John W. Alexander, president of the National Academy of Design, answers the question: "Is Our Art Distinctly American?" Edwin H. Blashfield, president of the Society of Mural Painters, describes "The Painting of Today," while "The Painting of Tomorrow," is commented upon by Ernest L. Blumenschein. Walter Pach, himself a post-impressionist, gives "The Point of View of the 'Moderns'." Jay Hambidge and his son, Gove Hambidge, present some curious discoveries in a paper on "The Ancestry of Cubism." The whole collection of articles is gathered under a general heading "This Transitional Age in Art."

ELECTRICAL OPERATIVE TREATMENTS FOR DISEASES OF THE SKIN AND MUCOUS MEMBRANE.

By W. KNOWSLEY SIBLEY, M. A., M. D., B. C., M. R. C. P., London, England.

In these days of rapid progression, great changes are frequently brought about by the introduction of completely new methods of treatment. The only hope of cure for many cutaneous diseases, a short time ago, was extirpation by the surgeon's knife, most of these lesions can now be cured more satisfactorily and permanently by such electrical treatments as (1) electrolysis, (2) ionization, (3) high-frequency currents, or (4) X-rays.

Electrolysis.—Electrolysis may be defined as the chemical action of the constant current of electricity in electro-conducting media, such as the tissues of the human body. If both poles of a galvanic or constant current are connected with needles, and these are inserted into the skin, as soon as the current is turned on, oxygen (which condenses partly as ozone and hydrogen-super-oxide) is generated at the positive, and nitrogen at the negative pole. Acids are also generated at the positive, and alkalies at the negative electrode. The tissues round the positive needle become coagulated and hard, and those about the negative are cauterized, and made liquid by the generated alkalies becoming dissolved.

In other words, electrolysis is the name given to the method of applying a galvanic or constant current of electricity as a cauterizing or destructive agent, and is especially useful for the destruction and removal of nævi, moles, superfluous hairs, warts, benign tumors, such as sebaceous and other cysts, fibromata, ganglion, etc.

The modus operandi in the case of nævi or moles, superfluous hairs, etc., is now generally known, and therefore it is unnecessary to describe it here; but in the case of the removal of small simple tumors, such as sebaceous cysts, it is quite of recent introduction.

If the cyst is small, the size of a pea or bean, a negative aluminum needle is inserted into its center, and a current of about 5 milliampères continued for one or two minutes, after which the strength is slowly reduced to zero, and the needle withdrawn. No surgical dressings are required. In a few days, the whole tumor will have shrunk up, and as the cyst wall has been destroyed by the current, it will not recur. For larger cysts, a few drops of normal saline solution are injected into the center of the tumor, and both positive and negative needles are then inserted into the center of the cyst by separate openings, but fairly close together. The needles are made of copper, and must be inserted parallel with, but not touching, each other. A current of two to five milliampères is then turned on for from three to five minutes, according to the size of the cyst.

A considerable amount of copper salt is rapidly deposited on and about the positive needle, so much so there may be some difficulty in withdrawing it, unless the current is reversed for a few seconds before the operation is completed. Both needles are then withdrawn, the punctures closed with a drop of collodion, and the tumor left alone. As there should not have been any hemorrhage, surgical dressings are not required. In the course of four days to a week, the opening, by which the negative needle was inserted, will have enlarged and joined that of the positive, and, if sufficient current has been given, it will be found easy to enucleate through this opening the whole of the contents of the cyst, together with the cyst wall, or the contents may have escaped of themselves as a congealed necrotic mass. The loose skin over the cyst will soon contract, and leave but little evidence of the former tumor formation. The tumors formed by molluscum contagiosum are cured by the same process.

If desirable, it is always possible to render all operations by electrolysis absolutely painless by the local hypodermic injection of 2 per cent. novocaine solution, unless the method of driving in some cocaine by ionization be preferred.

The following advantages of removing

small tumors by means of the electrolysis needle instead of by the knife, are obvious. The skin does not require to be prepared previous to operation, or irritated by antiseptics; and if situated in the hairy parts shaving is unnecessary. The patient is not required to lie up but can go about his work as usual. The operation is much less painful, both at the time and afterwards. As there is not any hemorrhage, surgical dressings are not required. Stitches do not have to be inserted, afterwards to be removed. There is no risk of inflammation or suppuration in the wound, and there is no scarring, as no incision has been made.

Ganglions are cured by inserting the negative aluminum needle into the center, and using a current of 5 to 10 milliampères for from 1 to 5 minutes. The treatment may be repeated at the end of a week, if necessary. Dilated capillaries, known as telangiectases, are readily contracted, and obliterated by the insertion of the negative aluminum needle for a few seconds; freckles and other pigmentary deposits may also be dealt with efficiently in the same way. Boils and carbuncles are best treated by puncture with a zinc electrolysis needle.

Ionization.—Ionization of zinc salts will cure the various forms of tuberculous skin diseases, especially the non-ulcerated form of lupus vulgaris. Old-standing tuberculous sinuses may be healed up by the insertion of a zinc electrode, covered with lint soaked in a 2 per cent. solution of zinc chloride or sulphate, care being taken that the bottom or end of the sinus is treated before the superficial or external part is dealt with. Warts are cured by the introduction of magnesium salts, and corns by zinc ions. The latter are much more tedious to remove than the former, as, from the nature of the dry callous structure, it is difficult at first to get the current to penetrate, but perseverance will bring about a cure in time. Chlorine ions will often absorb and remove scar tissue, whether the result of burns or surgical operations, etc.

High Frequency Currents.—These currents are curative for all local pruritis conditions, especially pruritus ani or vulvæ. The glass vacuum electrode is applied to the region daily for from 10 to 15 minutes, and clears up most cases after from 6 to 12 applications. They are also useful for the treatment of hemorrhoids, fistula in ano, etc., a pointed glass vacuum electrode being inserted into the anus for this purpose. Pain is quickly relieved, and the distended or inflamed veins soon shrivel up. With this method of treatment, it is neither necessary nor desirable to put the patient to bed; he can continue his occupation as usual. The treatment is practically painless, so that it is never necessary to give morphia either before or after the operation, nor is any anesthetic required.

Local applications of the high-frequency vacuum electrode have also proved curative in cases of chronic eczema, seborrhea and seborrheic eczema, alopecia and alopecia areata, acne vulgaris and rosacea, pernio, lupus erythematosus, chronic ulcers, and the condition of the skin known as "lichenification," etc.

X-Rays.—Correctly applied, the X-rays will cure most forms of skin cancer, such as rodent ulcer, and will also rapidly heal up chronic ulcers, such as varicose, indolent, and tuberculous, including those of lupus vulgaris.

The tumors of mycosis fungoides are rapidly dispersed by the X-rays, one application often being sufficient to remove a fairly large swelling.

Tuberculous glands react very favorably to repeated doses of 1/3 to 1/2 Sabouraud's pastille, and there is no risk of distributing the bacilli into the general blood stream, thus setting up a disseminated tuberculosis, which is always possible after removal by the knife.

Nearly all chronic forms of skin diseases, such as eczema, psoriasis, lichen planus, etc., are locally cured by the application of the X-rays.

The question of the exact doses of rays necessary, or most appropriate, for the treatment of the various skin diseases is, and always will be, largely one of personal experience, and must vary with each particular case, and on every separate occasion, according to the appearance of the lesion before each treatment. There is no doubt that the tendency among X-ray workers, at the present time, is to give smaller doses at rather more frequent intervals than was formerly the case.

A few dermatological facts have to be re-

membered among the general principles. The human skin has been proved to absorb about 50 per cent. of the average dose of the X-rays, so that only about half of the rays penetrate the skin and act upon the subcutaneous tissues. Taking the pastille of Sabouraud as the standard to calculate the maximum dose of the rays, which the skin will stand without the production of a severe erythema, the various doses usually employed are calculated as 1/5, 1/3, 1/2, 3/4, 7/8 and 1/1 of this pastille.

It has always to be remembered that the effects of repeated doses of the rays are cumulative for, at least, a period of three weeks, that is, the skin requires three weeks to recover from the effects of a therapeutic dose of the rays. The operator must, therefore, be careful not to administer more than the total of one full dose within a period of three weeks. That is to say, that if a full dose has been given, no further treatment should be given until at least three weeks have expired. If 1/2 dose has been given, this may safely be repeated once within a period of three weeks. A 1/3 dose may be repeated twice within the three weeks, and so on.

As a working hypothesis, the following systems have been found satisfactory:

(1) Any dose between 3/4 and 1/1 should not be repeated within three weeks.

(2) A 1/2 dose may be repeated at the end of 14 days, and then after another three weeks.

(3) A 1/3 dose may be repeated at the end of a week, then after 14 days, and then after another three weeks.

(4) About 1/5 dose may be repeated weekly.

Different types of skin lesions react best under different plans of dosage. Thus, the first is the best type for the treatment of ringworm, favus, hyperidrosis, keloid, angiomata, warts, nævi flammei, certain benign tumors, such as fibromata, myomata, lipomata, and epitheliomata of the skin, especially rodent ulcer.

The second is the best plan for the treatment of warty tuberculosis, such as hypertrophic lupus, both of the skin and of the mucous membrane, ulcerative tuberculosis of the skin, sinuses, especially in tuberculous processes, scrofulous glands, all forms of scrofuloderma, and in erythema nodosum.

The third is the most satisfactory system for the cure of many of the more chronic and persistent types of dermatoses, such as the various forms of eczema, especially the very chronic variety, but it is also often efficacious in the more recent types, in the eczematous stage of mycosis fungoides, seborrhea, and the seborrheic eczemas, and also eczema of the nails. Psoriasis, psoriasis of the nails, and lichen planus react most favorably to the same plan of dosage. Pruritus ani and vulvae, prurigo, acne vulgaris and rosacæe, sycosis, pernio, especially for the relief of burning and itching, may all be cured by this system of dosage.

The fourth is a convenient plan for many of the milder forms of skin disease, occurring in susceptible regions, when it is only necessary or desirable to produce a slight effect on the surface. Under careful supervision, these doses may safely be continued for some time, and are useful in conditions such as seborrheic alopecia, and other forms of baldness, when the gentle stimulating effects of the rays are very beneficial to the growth of the hair.

As it has now been proved conclusively that many of the more obstinate forms of skin diseases are cured by the X-rays, when all other treatments have failed, the question whether it is desirable to clear up some very chronic conditions naturally presents itself to the mind of the practitioner. There is a popular idea, almost amounting to a superstition not only among the laity, but also among a large section of the profession, that if you cure what, for convenience, may be called a patch of chronic gouty eczema, there is a considerable risk of setting up an attack of gout elsewhere. The association between bronchitis and eczema is also another very general tradition, and it has often been maintained that in some patients the one replaces the other; in other words, if the eczema gets well the bronchitis becomes worse, and *vice versa*.

The question naturally arises, Is there any real or scientific foundation for these theories?

The skin is an excretory organ and the production of an eczema or psoriasis, for example, is generally considered to be the re-

sult of the irritation of some deleterious chemical body being excreted by the skin, which body being present in excess in the subcutaneous and cutaneous tissues produces by irritation the inflammatory reaction, which gives rise to the skin lesion, known as eczema, psoriasis, etc. To believe in the popular theory it is therefore, necessary to consider that a pathological condition of skin is more desirable for the excretion of these deleterious bodies than a normal skin. This supposition is unscientific, and cannot have any foundation in fact.

It must be obvious that, for the skin properly to perform its normal function of excretion, it must be in a normal physiological condition, and to believe that an inflammatory state of the excretory glands and ducts, as in chronic eczema, is desirable for the ridding of the system of such things as gouty by-products, is obviously absurd. To argue the reverse is to consider that the process of converting a pathological skin, such as an eczematous one, into a normal healthy one, is to arrest the natural physiological action of the organ, when, as a mater of fact, the natural processes must be increased, as a healthy skin must be a far better excretory organ than an inflamed one.

No one will say that a diseased kidney is an organ which does its work better than a normal one; why, therefore, should a diseased skin be considered a desirable covering for the protection of the human body? An extensive pathological condition of the skin naturally throws more work on the other excretory organs, especially on the kidneys. Hence, the importance of careful attention to these in all chronic dermatological conditions.

It may, therefore, safely be assumed that it never can be wrong to clear up an old standing skin eruption, especially if at the same time attention is devoted to improving the excretory powers of the other organs, and that the fear of producing bronchitis by curing a patch of chronic eczema has no foundation in fact. Many illnesses are apt to recur at more or less definite intervals, and the fact, that an attack of bronchitis happens to correspond with the disappearance of an eczema, is not an argument that the one depends upon, or bears any relation to, the other. Many cases of bronchitis occur while an eczema remains, and many eczemata continue, notwithstanding the onset of an attack of bronchitis.

A large delegation of men and women interested in the work of Mt. St. Rose Hospital at St. Louis, has begun an active campaign to raise $300,000 for that institution. The hospital limits its work to the care of tuberculous patients, and is in great need of a large sum of money to enable it to meet the present demands and increase its facilities. It is said that more than 60 per cent. of the patients are non-paying, and the profits from the paying patients are devoted entirely to defraying the expenses of the institution.

A bond issue of $250,000 will probably be approved by the authorities to provide buildings to care for the tuberculous patients at Koch Hospital, St. Louis, the municipal institution used exclusively for the care of tuberculous patients. At present the city is erecting small frame houses to provide shelter for forty patients that have been cared for at the City Hospital during the winter because of the crowded condition of Koch Hospital.

The Visiting Nurses' Association of St. Louis visited 26,052 sick persons during 1913. In addition to caring for the sick, the nurses instruct families to observe the rules of sanitation. The Visiting Nurses' Association at Springfield made 1,833 visits during 1913. Their work is similar to that of other visiting nurses' associations.

An application of oil of wintergreen is useful when removing adhesive plaster.

Zinc ointment is useful in bed-sores. First cleanse with alcohol.—*Summary.*

REPREHENSIBLE MEDICAL ADVERTISING.

By W. T. MARRS, M. D., Peoria, Ill.

A few large newspapers and a few of the better class magazines are now refusing to accept objectionable advertising matter of a medical character. It might be remarked in passing that the line of demarcation between the good and the bad is not always clear and distinct, since some things which gain a measure of professional sanction and much free advertising afterward turn out to be frauds. On the whole, however, the manner in which an article is presented has telltale marks about it which are at once recognized as either fraudulent or on the square. A remedy presented in a blatant and brazen manner ought to deceive no one, yet there are always plenty of gullible people ready to bite at anything no matter how absurd and preposterous its claim for patronage.

The other day, for instance, I happened upon a consumptive woman well advanced with the disease who was taking a "consumption cure," which cost $25 per bottle. Think of a woman in indigent circumstances with a worthless husband and depending for shelter upon her ignorant and poverty-stricken parents putting up that sum of money, given her by charitable friends, for a nostrum that is worthless! The label on the bottle handed out the usual bunch of "hot air" that accompanies an ornery remedy that is conceived in evil and exploited in iniquity. Its active ingredients was a South American herb and a newly-discovered specific for the "great white plague." The poor woman needed milk and eggs and blankets and a better place to sleep, but her money was going for a remedy which was perhaps doing her bodily injury and holding out to her false hopes. Who will raise a dissenting voice when I say that such remedies should be suppressed and their perpetrators sent to jail? And what about the great scientist (?) who ever so often heralds to the world through the daily print a sure cure for tuberculosis? The only difference in the two cases is that the latter is either a monomaniac or is simply grafting on a bigger scale.

Nervines and "stomach bitters" are very objectionable remedies. They nearly all contain whiskey and not a few contain habit-forming drugs. Dyspeptic and neurasthenic individuals soon acquire the patent medicine habit. The lank individual who hangs over the druggist's counter scanning the rows of bottles put up in pretty cartons scarcely realizes that he is catering to a dope or whiskey habit by way of the patent medicine route.

Thousands of people put up good money every year on the fake advertisements that are found especially in the cheap mail order papers. The pictures are as offensive to good taste as the texts of the obnoxious remedies. For example, note the "catarrh" remedies. A woe-begone individual is being bidden adieu by his erstwhile loving wife. The man hawks and spits so badly that the good woman, while she "hates to do it," must pass up her unclean husband. A dollar or so invested in this wonderful remedy would have cured the fellow and preserved domestic tranquility. Again, the "catarrh" germ (?) is often shown a fierce-looking miniature brute. All the catarrh advertisements try to hammer in the idea that "catarrh leads to consumption."

Other offenders are the fat-reducers, the bust-developers, the hair-removers, the bald head cures, the dope cures and the "ladies in trouble" ads. I even notice that the lady who puts the remedy in John's coffee to cure him of the tobacco habit is still doing business at the old stand. Any remedy which promises to "cure" anything should be tabooed or at least looked on with suspicion.

The "weak men" specialty should surely go. They wrest thousands of dollars from young men in exchange for their worthless remedies. More than that they obsess many young men with the idea that they have a serious disease when the trouble is usually only a slight functional disturbance of transient duration. Many neurasthenics get their start from fooling with advertising sharks and listening to their siren song which is always sung for gain. We need a general cleaning up of the advertising matter which is presented to the lay world. A revision upward is a thing to be desired.

PROPHYLAXIS OF SYPHILIS AND PROFESSIONAL ETHICS.*

By ALFRED SCHALEK, M. D., Professor of Dermatology, University of Nebraska; Member of the American Dermatological Association, etc., etc., Omaha, Neb.

No other disease has attracted so much attention from the profession and the laity in recent years as syphilis. This is due: (1) to our rapid advance from empiricism to actual scientific facts, resulting in the discovery of the spirocheta pallida, the establishment of the complement fixation test, the leucocytosis count of the spinal fluid, the cultivation of the specific micro-organism, and the valuable addition of arseno-benzol to our therapeutics; (2) to the gradual awakening of the public that syphilis is more prevalent than any other ill of human kind, that it attacks innocent and guilty alike and that it has no more right of existence than plague and yellow fever.

The time is fortunately rapidly passing away when syphilis was mentioned in whispers only and when the physician had to create fictitious names for it, so as not to shock the sensibilities of his patients. Not less than five years ago the word syphilis was hardly ever seen printed in any daily paper or magazine, outside of medical journals, and the great majority of readers did not know of its existence. Now publicity is the watchword and we see even a problem play on the stage setting forth the nature and consequences of this disease.

The question of prophylaxis of syphilis has outgrown our former infantile attempts. Today it imposes duties not only on the medical profession but also on legislators, philanthropists and social economists. Syphilis is a systemic disease; it requires a lesion to enter the circulation and is by no means restricted to the genital organs but may be inoculated on any part of the body. For a short time the virus seems to prefer the superficial tissues, but later on it may attack every organ and tissue of the body and cause permanent impairment and destruction of the most important functions. The field of syphilis is no longer restricted to the dermatologist and syphilologist but is of considerable interest to the internist, alienist, ophthalmologist and the pediatrician. Affections of obscure and disputed etiology have lately been demonstrated often to be due to the same specific cause. Such are aneurism of the aorta, angina pectoris, arterio-sclerosis, myocarditis, interstitial nephritis, meningitis, paralysis, tabes and others. Others are bound to come to our knowledge with our increased diagnostic facilities. Ricord, who lived long enough to see some of the new achievements in syphilis, said: "I have often been accused of seeing syphilis everywhere, but I am afraid that I did not see it often enough." Not the least baleful is the influence of syphilis on the second generation. Children perish through miscarriages and premature births; if born at term they will either succumb sooner or later or live poorly developed in body and mind, stamped physically and mentally with inferiority for life. Syphilis causes not only race murder but race degeneracy as well. For these reasons it destroys the essential object of matrimony, the perpetuation of human kind. It also interferes with a more sentimental phase of married life, the pursuit of happiness and contentment—mutual love and esteem—being impossible under conditions where disappointments, disgrace and separations are the common occurrence.

Societies for the purpose of suppressing the social evil are being organized in all the larger cities; the medical profession is foremost in this fight. The late Prince Albert Morrow, of New York, gave a large part of his last years to this noble work. The subject of the prophylaxis of syphilis formed an important part of the program of the last International Congress of Medicine in London. One of the interesting papers was a report by Gauchet and Gougerot, men of large experience in this field, enumerating all possible means of transmission of syphilis and suggesting measures how to prevent them. In reading this report one is

*Reprinted.

impressed with the fact that a great many of their recommendations could only be carried out with the co-operation of the patients. If the patient refuses to take advice and abide by instructions, the physician is helpless. It is pitiful and at the same time ludicrous to observe how Gauchet tries to attain his purpose and still comply with his duty of professional secrecy. The restrictions of professional secrecy are illogical and unjust at times. A lawyer is bound to protect his client for past deeds only, but need not shield him for future criminal intentions, and, furthermore, he may harm a few people only by obeying his code of ethics; the physician is too often forced to stand by idly and see an utterly unconscientious individual jeopardize a whole community.

Syphilis must be attacked in two directions —in its relation to society and to the individual. Syphilis is contracted directly by sexual contact and indirectly through a virus carrier. Sexual functions are indulged in legitimately in marriage and promiscuously outside of it. Prostitution contributes the greatest factor in spreading infection; it is only a question of time before every prostitute becomes diseased. The problem how to deal with prostitution is not solved. Official regulation has proven a failure wherever attempted. Absolute suppression is the only relief; while seeming an Utopian dream, it is feasible with the honest co-operation of everybody concerned. It cannot be achieved by the closing of the bawdy houses alone. It necessitates measures to stop all other sources leading to prostitution, such as a strict enforcement of white slavery laws, living wages for working girls, prosecution of quacks and abortionists, protection of minors and education in sex hygiene, etc. While we still discuss the pros and contras of the advisability of teaching our youth sex physiology and hygiene, such a step has already been taken with gratifying results abroad. Nobody can, however, object to teaching adults along this line: lectures should be given and pamphlets distributed in places where people congregate, such as factories, armories and lodging houses. Rules should be put in force in all public institutions, such as poorhouses, hospitals, prisons, that everybody must be thoroughly examined on admission and undergo treatment if found afflicted.

Syphilis in marriage is usually transmitted by the man. The father of a prospective bride frequently looks up the commercial and social standing of his son-in-law to be, but rarely satisfies himself as to his health. The vitality of the race, the happiness of the family and the endeavor to suppress syphilis would greatly be benefited by a law requiring a health certificate by an experienced and reputable physician, based on a clinical, microscopical and serological examination. At present the victim has the questionable right to seek redress in divorce after the injury is done; this may be due to the general cynical impression that the communication of disease between husband and wife is a personal matter. A recent report of the Chicago Vice Commission describes the situation very clearly: "An application for a license of any kind, whether it be to construct a house, run a pushcart, peddle shoestrings or keep a dog must be accompanied with evidence that the applicants are reliable and responsible. But for a marriage license any person, unknown and unattended, as far as one knows, an epileptic, a degenerate or one who has in his blood a loathsome disease, may pass his name through the window with that of a similarly questionable female and be granted the divine right to perpetuate his kind in turn, thereby placing a burden on society and the community for generations to come." A law making a health certificate obligatory before marriage has for the first time been recently passed in Wisconsin and its results will be watched with more than ordinary interest. Another law that should be enacted and would hardly meet with any objections anywhere is one that makes it a punishable crime knowingly to infect another person with syphilis or gonorrhea. While the actual cases of conviction might be small, due to the unwillingness of the victim to testify and the need of proof of knowledge of the disease, the fear of punishment would curtail the spread of syphilis in this way considerably. The statute in force in California and some other states requiring a report of venereal diseases, without giving the names of patients, does not seem any advantage, except as a matter of more accurate statistics.

At the present moment we are more concerned to know what the medical profession can do to prevent syphilis under existing conditions. Education and moral persuasion, warning syphilitics of the danger to others and their unfitness for marriage while in the active stage of the disease and for years afterwards, will carry ground with intelligent and fair-minded people. But if the patient refuses to listen to us, if he marries and infects his wife, what shall we do? Are we allowed to tell her that she has syphilis and was contaminated by her husband or shall we make ourselves accomplices of the man in order to shield him? If we wish to institute the necessary treatment and take precautions for her surroundings, we must draw on our imagination and make some more or less ridiculous explanation of the situation.

I wish to recall a few cases which illustrate this point. A young girl, the daughter of respectable people, who in my mind had acquired her trouble innocently, consulted me about a lesion on her lip. Examination showed it to be an initial sclerosis; mucous patches were found in her mouth, an ulcerative pharyngitis in her throat and a macular eruption on her body. She was engaged to be married. I asked her to send her fiance to me for an examination; if I found him also infected, both should take treatment as long as necessary and might get married when it was considered safe. I found him clinically and serologically sound and told the girl the only fair course for her to take was to break off all relations for the time being. They got married shortly afterwards. About three years later the woman came to see me with a child suffering from symptoms of severe hereditary syphilis and blamed me for not preventing her marriage by every means, when I was so certain about the outcome. Another case was of a salesgirl in a dry goods store. She had typical syphilitic lesions in her mouth and on her body, but in spite of my urging would not give up her occupation. Hundreds of people were exposed daily to the infection, but I did not see a way, compatible with professional ethics, to prevent it. A third experience came to me when two prominent men acquired chancres on the face within a short time in the same barber shop. To call the barber to account would have meant drawing publicity to their trouble and possibly a damage suit, so as they both objected to any action, I was forced to leave matters as they were and allow others to take the same terrible chance.

I realize how difficult it is to remedy this paradoxical situation. Communicating with parents and guardians regarding their children and wards, with employers about their employees, with the wife about her husband and *vice versa* is out of the question. To report the patients to the health authorities so that proper measures may be taken is impossible under present conditions. In order to make these means possible and to manage syphilis the same as other infectious diseases, these conditions must be changed. The people do not object to having their physicians report smallpox, measles, diphtheria, etc., and submit cheerfully to sanitary precautions and to isolation. They do not consider this a breach of professional secrecy. Why it is different with syphilis? The reason is because it is generally accepted as a shameful disease, due to immoral practices and casting reflections on one's character. It is our duty to correct this wrong impression. The public must learn that everybody is liable to get this disease in the most innocent way and when it is least anticipated; that the sexual origin is growing less and less, as our prophylactic and therapeutic measures become more efficient. The name "venereal diseases" should be abolished entirely, since it conveys the idea of moral turpitude and unworthiness of sympathy and consideration. At the present time many hospitals refuse to take care of these patients. It need not be stated that this is narrow-minded and unscientific. Any danger of infection to the other patients can easily be obviated by reserving special wards for specific cases; their location should be changed frequently, after thorough disinfection, to prevent their being notoriously known and shunned. Restrictions commonly put on syphilis by sick benefit societies and insurance companies are unjust and inhuman. Dispensaries should be opened for the free and up-to-date treatment of specific cases and as this has developed to such a degree that it needs considerable skill and judgment, it should not

be left in the hands of young, inexperienced graduates. The time is too short to go into details as to the best treatment to eradicate syphilis in the individual, an important task in the prophylaxis of syphilis. The last word has not been spoken as yet as to the most efficient therapy, but let us hope that when it comes professional ethics will not allow it to become a pure commercial ware, retailing at such an exorbitant price as to be inaccessible to the poor. When the time comes that syphilis is looked upon only as a pathological condition, in no way different from others, when its stigma of disrepute has been removed, when our therapy will destroy the micro-organisms and eliminate their toxins and not only secure a symptomatic cure, then our ambition to make syphilis a disease of the past will begin to realize.

Brandeis Theatre Building.

FOR AUTOINTOXICATION.—A saline laxative, fasting two or three days with an abundance of water, will cure most cases of autointoxication and save the vital organs, such as the kidneys, from unnecessary irritation by the use of gastrointestinal antiseptics.—*Medical Council.*

When confronted by hematuria following an abdominal injury, do not trust to luck but determine with as much positiveness as you can whether or not the bladder has been ruptured.

A patient suffering from Bright's disease is particularly susceptible to mercury. In this class of cases be especially careful upon the development of ptyalism.

Always examine the interior of the mouth for lesions of the mucous membrane to confirm the diagnosis of acute lichen planus. The grayish-white "snail-track" streaks and dots are very characteristic of the disease in this situation.

To alleviate renal colic, put patient into a hot bath—morphia may thus be unnecessary.

Intestinal antiseptics are sometimes well worth trying in troublesome cases of psoriasis.

Don't charge a patient suffering with acute prostatitis with gonorrhea until infection from a dirty catheter has been excluded. Many an infection due to a contaminated instrument has been attributed by the physician at fault to an indiscretion on the part of the patient.

The use of strong tar or carbolic soaps should be always prohibited in cases of eczema except the very chronic ones.

Most artificial dermatoses, such as those produced by croton oil, have been shown to be sterile.

Of all the pre-cancerous conditions senile keratosis and leukoplakia are the most frequent.

Chronic sycosis, if not benefited by vaccine treatment, may yield more readily to radiotherapy.

Try a hypodermic of morphia and a hot bath (105 degrees) in acute retention due to spasmodic stricture.

Do not be influenced too much by the clinical aspect of an acute facial eczema. True, it may simulate an erysipelas closely, but the constitutional signs of the graver malady will be wanting.

Cases of sclerodermia are often benefited by the use of thyroid extract, particularly when fairly large areas are involved.—*Ex.*

ABSTRACTS

EFFECT OF ACCIDENT IN PRODUCTION OF GYNECOLOGICAL CONDITIONS.—An interesting article on this subject by James E. King, appears in the *Buffalo Medical Journal*. He says, there are probably no experiences more perplexing and trying to the conscientious surgeon than to be called upon, in certain cases of accidental injury, to determine the influence of the alleged injury as a cause of a physical condition or as a factor in producing subjective symptoms. Many such cases offer ground for an honest difference of opinion, and as a result a plaintiff with a just claim may fail to recover adequate damages, or as is more often the case, a corporation becomes the victim of a clever lawyer, willing medical experts and a prejudiced jury. Of all such cases there are probably none more difficult, and in which more injustice may be done plaintiff or defendant, than those in which the effect of injury upon the female pelvic organs come in question. It is in such instances that the medical expert has a wide latitude and the jury will often decide, not so much upon the merits of the case as upon the personality of the expert.

Usually the condition and symptoms referable to the pelvic organs are mentioned in the complaint incidentally in connection with other injuries, but occasionally the pelvic condition alone is made the basis for the damage claims.

For convenience in considering the subject, the effect of accident and injury may be classified as follows:

1. Disturbances of menstruation.
2. Production of displacements.
3. Production of abortion and premature labor.
4. Injuries by direct violence.

Disturbance of the menstrual function following accidents presents some interesting features. It is not uncommon and is often presented as evidence of injury. The character of menstrual disturbance may present many possible variations. It is seen both in the parous and the nulliparous. The character of the accident and the degree of injury bears no direct relation to the particular disturbance that may result. A shock or fright alone, without physical injury, is sufficient. On the other hand, many of these women will associate such symptoms with actual or supposed injury to the abdomen.

Among the common effects of accident upon menstruation may be mentioned an irregular bloody discharge which begins quite promptly after the injury. This may continue, with slight remissions, over a period of weeks or it may persist uninterrupted for a shorter time. Following this the menstruation will usually recur more frequently and be more profuse than usual. Occasionally a woman who is menstruating at the time of the accident will suddenly cease. By far the most common effect, however, is the simple disturbance of the normal menstrual date with the increased flow. The period will anticipate the normal date from a few days to a week with more profuse and lengthened flow.

Pelvic examination of these women will often show no pelvic abnormality. Sometimes there will be tenderness of uterus and ovaries suggestive of general pelvic congestion. There may be pelvic symptoms that bear this out.

It is interesting to speculate as to the cause of such flowing following accident. With an existing fibroid or polyp an explanation would be at hand, but in cases of perfectly healthy women with normal menstrual habit we are obliged to look for the cause in some other influence. In turning to shock and fright for our explanation we find much to justify our regarding these factors as the underlying cause. That mental states may influence menstrual function we have abundant clinical evidence.

It is difficult to explain altogether satisfactorily how mental states may thus influence menstrual function. It is probably through the sympathetics and vaso-motors controlling uterine circulation. Crile has shown by his work that shock and fright will produce marked changes in the brain cells and it is not unlikely that the disturb-

ance of the vaso-motors has its basis in pathology. Certain it is that all of these patients show to varying degree that peculiar symptom-complex which is commonly termed traumatic neurasthenia and hysteria. Undoubtedly our greater knowledge will show these conditions to be an expression of brain pathology resulting from the fright and shock, and then it will be much easier to account for the various functional disturbances that are present in these cases. In the writer's opinion the disturbances of menstrual function following accident, in the absence of any pelvic lesion, should be classified with other evidences of the neurasthenic state.

Under our second heading, displacements of the uterus, we find more tangible evidence of injury. That such effects may result requires no argument. In the etiology of retroversion Hirst places falls and jolts second to child-bearing in frequency. In a given case of retroverted uterus it is often very difficult to determine what factors are remotely or directly responsible. A retroversion occurring as the result of a fall or jolt presupposes relaxed uterine supports. Normal average supports maintain the uterus in position under the most trying circumstances but with relaxed and stretched supports, displacement may occur as the result of a trivial cause. Retroversion as a result of accident may, therefore, be more reasonably expected to be seen in women who have borne children. There are certain women, however, who have never borne children but whose uterine supports seem to be congenitally weak. These women too will require but little to throw the uterus back. In any case where accident or fall is given as a cause of retroversion one should of course be reasonably certain that the uterus was in position previously. Every physician sees cases of symptomless retroversion, and even should pelvic symptoms develop after an accident and examination discover a retroverted uterus it would not necessarily follow that the accident caused the retroversion.

The influence of retroversion as a factor with the jury in determining damages is probably very small. Obviously it should have no place in the case unless there be reliable evidence that the uterus was previously in normal position.

Prolapse is sometimes claimed to be the result of accident. A uterus whose points of attachment are weakened may and occasionally does come down as an acute prolapse following sudden straining effort. As a result of accident or injury such a prolapse may be very unusual.

The effect of accident and injury upon pregnancy is frequently abortion and premature labor. There are three possible causes that may operate to produce it under these circumstances. The shock and fright acting through the sympathetics; the jar from falls and finally the effect of direct violence. In a given case it is not often easy to determine which one of these factors is responsible. The influence of the mind upon uterine contraction is frequently seen in the lying-in chamber. Fright and shock acting through the sympathetics may possibly stimulate uterine contractions, or in some manner not altogether clear it may even cause death of the foetus. The effect of jars and falls upon the pregnant uterus is much more easily understood. A slight separation of the decidua or placenta may be sufficient to induce contractions and expulsion of the uterine contents. Direct violence may act in the same way.

If miscarriage can be embodied in the complaint as due directly or indirectly to accident it usually means that the plaintiff will recover damages. A miscarriage appeals to the average jury mind. He knows what it means and he knows from hearsay and perhaps from family experience that shock and injury may produce it. The jury is therefore always ready to accept the expert's opinion upon that point. The question as to whether the miscarriage resulted from the accident is a point for the jury to decide and no matter how remote the miscarriage may be this point is usually decided in favor of the plaintiff.

The cases quoted are taken from court records and clearly indicate how willing a jury is to compensate a woman for a miscarriage, no matter how remotely it may have been due to the accident. It is an interesting and curious fact that apparently the offspring has no value in the eyes of the law, and yet one of the most serious crimes on the calendar is the destruction of the child in utero. The woman may be compensated for

the pain and suffering incident to a miscarriage but not for the loss of her offspring.

EXAMINATION OF THE EYES AND EARS OF SCHOOL CHILDREN.—Dr. R. H. T. Mann in an article appearing in the *Journal of the Arkansas Medical Society* says, "the eyes and ears of every school child should be examined before they are permitted to enter school. There are several reasons why this should be done.

(1) Children suffering from infectious diseases could be excluded from school until they have been cured.

(2) Those with visual defects can have a more careful examination and in many cases the defects can be corrected by glasses or other means.

The teacher, in arranging to seat the pupils in the school room, can seat these children with poor vision to the best advantage, both for the child and the teacher.

Those children having degenerative changes going on in the eyes can have their work limited so that the progress of these changes can be checked as far as possible. To illustrate what I mean by this, by far the largest per cent. of myopia is progressive. These children should be taught only such branches as are absolutely needed for them to earn a living by following a vocation where the constant use of the eyes is not necessary for near work. They should not be allowed to do a lot of promiscuous reading, especially at night by a poor light, and then when lying in bed. Myopia is due to the excessive use of the eyes for near work.

A teacher can be taught in a few minutes to make an examination of the eyes. The ordinary test cards are so simple and the marking so plain that an error can hardly be made. Where the child does not know the letters, a card can be substituted with familiar objects and at a later time a more thorough examination can be made. A careful record should be made of all children with ocular defects and these children should be re-examined each year. By this means it is easy to ascertain whether or not the defect is progressing.

A small per cent. of children with visual defects can be given limited education and allowed to pursue some avocation where the eyes are not used continually for near work, and live a useful life; whereas, on the other hand, they will in time become almost, if not totally, blind and become a burden on the community.

The hearing can be tested easily with a watch and whenever it is found defective a more extended examination can be made to ascertain the cause. Every person ought to be able to at least suspect a child who is suffering from enlarged tonsils and adenoids. Enlarged tonsils and adenoids are the cause of deafness in nine-tenths of the cases in children, and these obstructions should be removed very early before the child is permanently deaf, and the operation will not restore the hearing. In many of these cases a tonsillectomy and adenoid operation is all that is needed.

THE MEDICAL TREATMENT OF CHOLELITHIASIS.—In an article on this interesting subject by H. B. Anderson in the *Canadian Medical Association Journal*, the treatment of which condition is at once so common and so important, the writer claims that apart from the question whether gallstones may or may not be dissolved, so long as the teaching, based on autopsy records and clinical experience was accepted that in over 90 per cent. of all cases they remained latent, medical treatment had a safe objective point. If the infection, bile stasis and attendant inflammation, which have been shown to be the causes of gallstones, could be removed, and they remained merely as innocuous occupants of the gall-bladder, then a natural tendency to a *virtual* cure was indicated. If, therefore, in a given case, this latent condition could be brought about and maintained, both the physician and the patient were satisfied with the results. It must be admitted that in many cases formerly regarded as latent, fuller knowledge and improved diagnositic technique would now recognize gallstones as the underlying cause of digestive disturbance, flatulency, etc. We are greatly indebted to surgery for this knowledge, but it has not established the view that gallstones are never latent.

Apart from his experience with large numbers of cases, and the opportunity of seeing the pathological conditions at operation, the

advantages of observation are not all on the side of the surgeon. The physician is usually able to follow his cases over a longer period, and often has a better opportunity to study, not only the initiation of disease, but ultimate results. The surgeon, moreover, deals with the more severe cases, those which have resisted medical treatment: in other words, the class of cases which all are agreed properly belong to the domain of surgery, he naturally takes a more serious view of the disease, and thus of the *hopelessness* of other than surgical relief. Dealing only with surgical measures, he is not in a position to estimate as fully the value of non-operative treatment as the physician, who has seen even a limited number of cures without operation.

While accepting the data supplied so abundantly by the surgical clinics, one may properly question if the broad generalizations sometimes made therefrom are in accordance with established facts. The teaching of Naunyn, Kehr, Aschoff, and others, that stagnation of the bile and infection are the chief underlying factors in the development of cholelithiasis, is now generally accepted. Obesity, pregnancy, ptosis of the viscera, fæcal stasis, infections in the portal area, and metabolic disturbances, are well recognized contributory causes. Gallstones are the *results* of these factors, and not the primary cause of the disease. If the basis of rational treatment be the removal of the cause of the trouble, are we warranted in concluding that a cure has been effected when the removal of these causes is only *incidental to,* and *not the main object of treatment?*

The spectre of danger from the development of serious, perhaps irremediable, complications from delayed operation is usually raised by the surgeon, his views naturally being based on the class of cases coming to him for relief. But it will scarcely be argued that his experience represents the average of those who have to deal with cases of all degrees of severity, from the mild or latent to the most serious. In proportion to the general incidence of gallstones, in from 5 to 10 per cent. of autopsies, the occurrence of many of these most serious complications, such as cancer, gangrenous cholelicystitis, gallstone ileus, etc., is so infrequent that the danger of their development in a given case is too remote to constitute in itself a reason for operation as a general procedure. It is correct to assume that recourse to early operation would appreciably reduce the general mortality by forestalling these rarer complications, when in the majority of all cases gallstones are latent, or at least do not produce symptoms sufficiently definite to permit of a diagnosis, and especially when the course of the disease will give timely warning in most of the diagnosable cases, and direct them to the surgeon? I believe that many physicians will agree with Kehr that it is fortunate that we are unable, by the X-ray or other means, to recognize the quiescent causes, if the presence of gallstones *per se* is to be taken as an indication for their removal.

But again it is claimed that operative cures are permanent whereas medical cures are only palliative. This statement, however, is hardly in accordance with our knowledge of the pathology of the disease or our clinical experience. After operations the bile stasis, infection and inflammatory changes must subside, and the underlying causative factors be removed, before the patient can be regarded as cured.

If the gall-bladder is not removed, and if the causes underlying the original infection which produced the gallstones remain or recur, on what grounds have we a right to claim that the stones will not form again, as in the first instance? Operative procedures have not been in vogue a sufficient length of time to determine definitely how frequently recurrences may take place, but that they do occasionally is well known.

A point which is too frequently overlooked after an acute attack, is the necessity of *prolonged rest in bed,* not alone until all symptoms have disappeared, but until pain, and tenderness on pressure, have passed away and sufficient time has elapsed for the subsidence of the local inflammation of the bile passages, re-establishment of drainage, and the disappearance of infection. This usually necessitates three or four weeks absolute rest in bed. Hot poultices are of value in acute stages. I do not believe that any case has been given the full benefit of medical treatment where complete rest for some weeks has not been carried out. In the subsequent management of cases, the treatment of vis-

ceroptosis by a suitable abdominal support, the avoidance of fæcal stasis and recurring infections in the portal area (appendicitis) are very important. It is interesting to note that prolonged rest is an essential factor in the surgical management of the disease.

"In conclusion, I believe the following statements are fairly warranted by our present knowledge of the disease:

1. That while surgical procedure is frequently the best, and often the only means offering a chance of relief, its advocacy, based on certainty of cure and assurance of non-recurrence, is not borne out by results.

2. That the main object of treatment is the relief of the infection and inflammatory changes, and not merely the removal of the gall stones. So long as there is no recurrence of the inflammatory attacks, there will be no attacks of gallstones.

3. That recovery not infrequently occurs under non-operative treatment, especially in early and mild cases, and particularly after first attacks, before serious local damage has been produced by the infection.

4. Medical treatment should be given a fair trial in all cases where the patient's physical condition does not warrant operation, and with the numerous patients who refuse operation. In many such cases I have seen complete and permanent recovery from all symptoms of the disease.

5. Medical treatment is indicated in many cases as a preliminary to operation, and in order to allow the acute infection to subside as far as possible.

6. Medical treatment is indicated in all cases *after operation* to allow of complete subsidence of the infection and, if possible, to prevent re-infection and recurrence.

7. I believe that it would make for clearness of thinking and give definiteness to therapeutic aims if we adopted the suggestion of Naunyn and gave up the term cholelithiasis and classified these various infections of the biliary passages as *cholangitis,* with qualifying terms such as *simple, catarrhal, suppurative, gangrenous, calculous,* etc., according to the condition present in the particular case.

Personally, I never advise strongly against operation in any case unless it is definitely contraindicated, but, after explaining the possibility of failure, and that operation may eventually be required, I do not hesitate in early and mild cases, and especially after first attacks, to give medical treatment a thorough trial, and have found that in many instances excellent and permanent results have been obtained."

CHRONIC CYSTITIS IN WOMEN.—G. G. Smith, Boston (*Journal A. M. A.*), holds to the view that persistent cystitis in women is not in itself a disease, but is the result of pathologic conditions outside of the bladder. This, however, is not the view generally held. He does not contend that simple cystitis never occurs but such cases will generally be cured by a few days in bed, urinary antiseptics and a few irrigations. If it still exists we must look for some other lesion, either in the kidney or ureter, in pelvis or urethra, or in the mechanism by which the bladder is emptied. He has collected the histories of ninety-eight women with cystitis, ward cases or out patients at the Massachusetts General Hospital, and analyzed them according to the pathologic conditions existing. In eight cases a simple cystitis was found. In the others renal infections, non-tuberculous, existed in 61 per cent., renal tuberculosis in 19 per cent., and in the others there was difficulty in emptying bladder, systemic and pelvic infections, or other causes. Every case that was really studied showed a certain or presumptive underlying cause and he maintains that simple cystitis is practically non-existent. Synopses of the cases classified as to the infection from renal sources or from ureteral causes or obstruction are given.

OPERATIONS IN PRIVATE HOUSES.—J. C. Hirst, Philadelphia (*Journal A. M. A.*), holds that it is perfectly feasible to make satisfactory arrangements in private houses for operations. An abdominal operation is, of course, more easily done in a hospital but it can be done in a home with careful preparation. Ordinary operations, especially those of repair of injuries at child birth are satisfactorily done in a private house. A trained surgical nurse is desirable but not absolutely essential if the surgeon can instruct an intel-

ligent attendant and attend to such details as catheterization himself. He gives full directions as to choice and arrangements of rooms, adaptation of household utensils as far as possible, etc.

THE PARATHYROIDS.—W. G. MacCallum's paper in the *Post-Graduate* is of much interest. He says experimental study of these organs has consisted largely in observing the effects of their extirpation, on the one hand, and of the injection of extracts of them, on the other.

Of tetany—the well-known result of extirpation of the glands—the most constant and definite feature is the hyper-excitability of the nerves to electrical and other stimuli. This forms the basis of the convulsions, and, secondarily, of the high temperature, rapid respiration, etc. Efforts to determine the mechanism of this change have shown that the hyper-excitability affects the nerve cells as well as their trunks and terminations.

By perfusion experiments it can be shown that the blood of an animal which has lost its parathyroids and developed tetany is so altered that it will produce a specific hyper-excitability in normal nerves which it is made to bathe and nourish. What the change is, is still doubtful, but analysis shows that in such blood the proportion of calcium compounds is reduced very greatly. It is known that the abstraction of calcium from a muscle-nerve preparation leaves the nerve hyper-excitable, while the replacement of the calcium brings the excitability back to normal. Too much calcium will still further dull the power of the nerve to respond to stimuli. Injections of calcium into the veins will almost instantly stop the symptoms of tetany, which reappear only when the effect of the calcium has worn off. Probably in such doses as we can calculate, this effect is not due to the mere replacement of the deficient calcium but also to the dulling effect upon the nerves of the excessive dose. Other evidence of the rôle of calcium in tetany is furnished by the observations of Erdheim, who found that teeth fail to harden and fractured bones to heal firmly in rats deprived of their parathyroids and living in a state of chronic tetany.

There is no very good evidence of the presence of a poison in the circulation in tetany. The time-honored experiment of removing blood and replacing it with salt solution whereby the symptoms of tetany are stopped, is not proof of the presence of a poison in the blood removed, but rather of the fact that the nutrition of the nerves suffers when the blood is so diluted, so that they no longer respond to even quite strong stimuli. The same results are obtained in normal animals.

Parathyroid extract given by mouth seems to have little effect; injected intravenously, it prolongs life somewhat and decreases the actual convulsions, without lowering the excitability of the nerves to any great degree. No definite relation is found between the parathyroid glands and exophthalmic goitre.

Infantile tetany, tetany of pregnancy and lactation, of various intoxications, and other more obscure conditions, as well as that which results from obstruction and dilatation of the stomach, appear to be caused not by the destruction of the parathyroids but by some cause external to them which produces these symptoms in spite of the best efforts of the parathyroid glands. In many of these forms—and perhaps particularly in the tetany which is so often associated with rickets and osteomalacia—a disturbance of calcium metabolism leading to the reduction of the soluble calcium in the blood and tissue-fluids seems to be suggested, and it is not impossible that in gastric tetany this same condition is brought about by the great loss of chlorides in the vomited fluid. Therapy in such cases is best attempted through the removal of the cause of the disease and not by supplying parathyroid extract. When the parathyroid glands are injured or destroyed by operation or otherwise, and symptoms of tetany result, parathyroid extract may be of some temporary use. Calcium is far more effective in overcoming the symptoms in such an emergency and will tide over a dangerous period, but transplantation of parathyroid tissue, though difficult and often unsuccessful, offers the only hope of permanent relief.

ACUTE PLEGMONOUS EPIGLOTTIDITIS.—Lederman, writing in the *Laryngoscope,* January, says, "Acute plegmonous epiglottiditis is an infectious process involving the submucous structures of the epiglottis and contiguous tissues. The disease is characterized by a sudden onset with distinct local manifestations. A seemingly normal person experiences a sharp pain in the throat accompanied by painful deglutition and a sense of fullness or obstruction in this region. The act of swallowing soon becomes an effort and the patient is very uncomfortable and distressed. The voice is distinct and guttural. These symptoms rapidly progress and may assume a serious aspect in a few hours.

At times the attack is ushered in with a chill, followed by a rise of temperature. Headache, nausea, and general malaise may accompany the other symptoms. The course of the temperature is not regular. It is highest at the invasion, falls abruptly as the process improves, and again ascends if complications arise. The pulse does not show much irregularity, but is weak and compressible.

On inspection, the pharynx appears normal or slightly congested. Further examination shows an enormously swollen epiglottis. It is dusky red in color, three or four times its natural size, and so obstructs the laryngeal orifice that it is impossible to obtain a clear view of that cavity. In all his patients the edema extended to the aryepiglottic folds. In two instances this infiltration was so marked as to cause difficulty in breathing. One woman was brought into the hospital in the ambulance in a cyanotic condition. In none of the cases was there any history of previous throat infection.

In this affection the edema is usually limited to the oral surface of the epiglottis, and does not extend to the laryngeal side of the cartilage. It rarely reaches the interior of the larynx. There is an anatomical reason for this peculiarity. Schnitzler states that the submucosa of the lingual surface of the epiglottis is loosely attached while that of the laryngeal side is closely connected to the cartilage, except in the region of the nodule. Furthermore, the submucous cellular tissue of the epiglottis extends unbroken to the latteral walls of the pharynx and to the base of the tongue; thus accounting for the infiltration at this site in these cases and in infectious diseases of the tonsil and tongue.

While edema of the ventricular band is sometimes present we seldom see a serous extravasation of the true cord because of its closely attached musculature.

Acute edematous diseases of the epiglottis and larynx is rarely seen in children. In a series of 245 cases collected by Sestler, only twice did the affection occur as a primary lesion.

The infiltration that follows the invasion of any pathogenic bacteria may be either serous or purulent in character.

In commenting upon the origin of septic infections of the throat, Semon calls attention to the conclusions of Dr. Max Jordan's investigations on the "Etiology of erysipelas." Jordan states: 1. There is no specific pus microbe. Together with the streptococcus and staphylococcus there are a great number of bacteria which will cause superation. 2. That pyogenic micrococci can produce all kinds of inflammation besides the purulent variety. Semon further says that in these acute septic lesions, though they differ somewhat in their appearance and location, pathologically they are identical and only differ in their virulence. Furthermore, it is absolutely impossible to differentiate between edematous and the purulent types of infection.

In considering this phase of the disease Theisen quotes the observations of Welch, who found that when the pneumococcus of the edematogenic variety (diplococcus lanceolatus) was injected subcutaneously into the tissues of some of the lower animals, it uniformly produced extensive local subcutaneous edema. He expressed the opinion that the pneumococcus was a factor in the production of the edema in his cases.

That certain regions are primarily attacked is probably due to a break in the continuity of the mucous membrane, thus permitting ready entrance of the pathological factor. When we consider the numerous forms of bacteria constantly present in the cavities of the upper air passages, it is surprising that we do not encounter more

cases of these serious infections. The tissue resistance must be very great.

Lederman goes on to say that, "To emphasize the serious nature of acute infectious diseases of the epiglottis and larynx, I have only to direct your attention to the four fatal cases mentioned by Theisen in his interesting paper, and to the five similar results in a series of fourteen cases which Semon reports in his classic paper. We must bear in mind that alarming symptoms appear suddenly but may subside in a few hours under active treatment. When local measures fail to bring about the desired results the question of tracheotomy arises. Moure states that in these cases intubation is a serious, difficult and dangerous operation, and that tracheotomy is the method of choice. Semon remarks that we must be very careful in adding further shock in these desperate cases. Seven of his patients operated upon by tracheotomy did not recover. Some of the complications that have appeared during the course of septic infections of the upper air passages are: pleurisy, pericarditis, endocarditis, pneumonia, peritonitis, and meningitis.

And summarizes: Acute infectious epiglottiditis suddenly appears without warning. Its progress is rapid and its symptoms are characteristic. It is seldom seen in children.

Though the four cases herewith reported were primary manifestations, this disease may appear secondary to infective conditions of the teeth, tonsils, pharynx, or tongue.

The ichthyol-glycerin treatment has proved very beneficial following the surgical intervention. The stock or autogenous vaccines should be considered in the treatment of these cases.

That this is not a rare condition, is proved by the fact that my three last cases were seen within a period of five months in the same institution.

SCURVY IN INFANTS.—George Dow Scott, in the *Post-Graduate,* states it is his belief that clinically the cause of scurvy in infants lies in one or in a combination of conditions as, for instance:

1. The faulty handling of the milk in the stable, and in the milk station.

2. In the long time elapsing between milking and the delivery of the milk to the house.

3. In the destruction of the ferments and enzymes through heating at high temperatures.

4. In the over-richness or poorness of the milk itself.

He says, the treatment, therefore, depends upon an intelligent understanding of the cause, of food constituents, of the proper modification of milk, of the addition of peas and of cereals, as well as of fruit juices, raw and cooked, to the diet. Fresh vegetables raw and cooked are antiscorbutic. Baumann and Howard found that the loss of the various food constituents through the feces was less when fruit juices were added to the diet. For instance, there was a marked retention of chlorine and sodium as well as potassium, calcium, and magnesium, but that the sulphur elimination was greater than that ingested.

The prognosis is favorable, always, if the disease is taken in time. The duration, anywhere from three to eight months, for although it takes from three to eight months of faulty feeding to produce the disease, the cure is not affected until the bones and bone marrow are normal. Therefore, the clinical healing is not identical with the anatomical. The microscope in the future will aid materially.

HYPERTROPHIED TONSILS INTERFERING WITH THE ACTION OF THE PALATE AND CAUSING DEFECTIVE SPEECH.—G. Hudson-Makuen, in an interesting paper which appears in the *Laryngoscope,* avers that one of the many objections offered to the removal of the faucial tonsils is the fact that the operation is liable to be injurious to the voice and speech, but little reference has been made to the fact that both the voice and speech may be impaired by not doing the operation or by leaving the tonsils intact.

I have previously called attention to the effect upon the palate of hypertrophied and degenerated tonsillar masses, the larger

ones, by reason of their bulk and consequent pressure upon the pillars, interfering with the action of the palate and the smaller, degenerated and catarrhal masses, by reason of their sepsis and by the spread of their infection, appearing to so obtund the nervous mechanism of the palate as to cause a sluggish or paretic action of its muscles.

The effect upon the speech is similar to that of insufficiency of the palate from other causes, such as a cleft palate or other forms of paralysis.

The palate is a far more important organ in relation to the human economy than it is commonly supposed to be, and its function in phonation and articulation is not very generally understood. The palate is a movable organ and it is composed largely of muscles which have their attachments in other movable organs of voice and speech, notably the larynx and tongue. The palato-pharyngii muscles have attachments in the superior cornua of the thyroid cartilage, and thus they have been called thyroid tilting and cord stretching muscles in the production of voice. They are peculiarly well adapted to the performance of this function by reason of their location in the pharynx and the upward and forward direction of their pulling force when the levator muscles are in contraction; and anything that interferes with this action of the palatal muscles, even in the slightest degree, must have its injurious effect upon the character of the voice.

Moreover, another important function of the palate, and one that appears chiefly in articulation, is what has been called a valvular function, it being for the purpose of closing the air passage from the pharynx to the nostrils during certain of the explosive sounds of speech. A complete closure of this valve fails to take place in almost all cases of cleft palate even after a fairly successful operation has been performed, and it fails to take place also in various forms of paralysis of the levator and other muscles of the palate. The failure of this closure in a post-operative cleft-palate case is due to a lack of sufficient tissue to form the valve itself, and to a lack of sufficient contractile power in the muscles owing to cicatricial formations; and the failure of the valvular closure in paretic conditions of the palate, of course, is due entirely to the muscular insufficiency, which appears in varying degrees all the way from a mere sluggish action to a complete paralysis of the palatal muscles.

There are two conditions of the palate which accompany or follow diseases of the faucial and pharyngeal tonsils. These are: (1) a hypersensitive or hyperesthetic condition of the muscles, and (2) an anesthetic condition, the former probably being the first or more acute stage of infection, and the latter a more profound and chronic stage. On the other hand the hyperesthetic condition predominating in those cases having degenerated faucial tonsils, which on account of their markedly septic condition produce a highly congested pharynx, while the anesthetic and slightly paretic palate seems to accompany the hypertrophied tonsils, or those which interfere with the motility of the palate in a purely mechanical way.

The treatment of this condition would seem to be a removal of at least a sufficient amount of tonsillar tissue to permit of a freer action of the palatal muscles. My own practice is to do a complete tonsillectomy only in those cases in which there is a marked degenerative and catarrhal condition of the tonsils with thickening of the plica and capsule generally; but in those cases in which there is mere hypertrophy of the tonsillar masses I am of the opinion that a more or less thorough removal of the tonsillar tissue only, leaving the capsule intact, although the more difficult, is the more desirable operation so far as the speech and voice are concerned, because the resultant motility of the palate is better than it is in those cases following complete eatra-capsular tonsillectomy, in which we are liable to have cicatrical adhesions and contractions.

This, Hudson-Makuen says, is a subject for discussion, and a most interesting one because it includes the whole question of so-called tonsillotomy vs. tonsillectomy.

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SOME PRACTICAL POINTS FOR GENERAL PRACTITIONERS.

If general practitioners were to keep a record of all patients coming to them for treatment, according to an editorial in *The American Journal of Gastro-Enterology*, each would record that about one-third of all cases he is called upon to treat would present symptoms of disturbance in the digestive tract. While most of these patients had conditions that were not very serious and easily amenable to treatment, there were a certain number who drag on from time to time in an uncured condition, which cases present great difficulties of diagnosis; for, if a correct diagnosis is possible of being made of any condition in medicine the indications for treatment are at once apparent. This last number of cases does not permit of carelessness or extreme ideas in the handling of them.

There is no line of work in medicine more varying in the etiology and diagnoses of conditions causing symptoms than those of gastro-intestinal affections. In most all of them we have epigastric distress or pain, vomiting, anorexia, constipation, nervous phenomena, and it is difficult for one to interpret from the symptomatology alone as to what the diagnoses are. This is not so difficult for one who is schooled and has made a special study of gastro-intestinal affections, but it is for the general practitioner, and it is with the hope of preventing those of our readers who are engaged in general practice making diagnoses that are unwarranted that a few words of caution are here mentioned. These are presented in a brief way, but it is hoped will be useful, nevertheless.

There is no one symptom that is a positive index of any form of stomach or intestinal trouble. Vomiting may be present in almost any abnormal gastro-intestinal condition, and is a common symptom in conditions not resident in the gastro-intestinal tract. Epigastric pain is a symptom of acute gastritis, ulcer of the duodenum, but tarry stools or occult blood may be found in feces from other Hematemsis or coffee ground vomitus occurs in ulcer, carcinoma, anemia and cirrhosis of the liver. Melena is a symptom in ulcer of the duodenum, but tarry stools or occult blood may be found in feces from other causes, occult blood being even demonstrable by the finer laboratory tests after the rough use of a tooth brush. Diminished acidity or absence of hydrochloric acid, while usually occurring with carcinoma, may be present in an atrophic stomach, chronic pancreatitis, pernicious anemia, and commonly occurs in other conditions where no carcinoma is present; important, too, is it to mention that carcinoma may develop in and under an old ulcer and then free hydrochloric acid is usually present. General abdominal pain may be due to a simple enteritis or colitis, or may be the first symptom of the beginning of an appendix inflammation, volvulus, mesenteric thrombosis, or intestinal obstruction. Obstinate constipation is due to causes all the way from simple functional disorders to that of unrecognized carcinoma of the large intestine.

While most of the appendix inflammations are of an acute type and are rather easily diagnosed, gangrenous appendicitis, the most dangerous form, may be quite delusive. Intestinal obstruction, when complete, is easy to diagnose, but until that time, the irregular and incomplete forms which are most commonly met with usually give one great difficulty in diagnosing unless the X-rays are employed. While the symptomatology of general peritonitis is classic in most every instance, the conditions that bring this about are not always easy to diagnose during the time that surgery may save the patient. The picture of an onset of acute pain, board-like abdomen, subnormal temperature, rapid pulse, etc., are not always present in acute perforation of the stomach, duodenum, intestine, or gall bladder. Not a few cases go on to the actual absence of liver dullness, due to the general peritonitis, before the diagnosis is made—and this, most times, is too late for the saving of life. The diagnosis of moderate degrees of obstruction of the pylorus, adhesions from cholecystitis, and chronic appendicitis without distinct severe attacks, but attended with irregular pains and tenderness in the right inguinal region and a variety of gastric symptoms, sometimes confuses the most skillful of diagnosticians. In the beginning, carcinoma of the stomach gives no subjective symptoms, and the same is true of carcinoma in the uterus, mammary gland and elsewhere in the body, and often symptoms do not ensue until the growth presents a mass easily palpable in size with cachexia and local symptoms rather marked —at which time it is usually too late for surgery. On the other hand, there is no reason why every case of abdominal disorder that is obscure in nature should be operated upon to make a diagnosis, for the public will not stand for this shortage on our parts and agree to submit their bodies to make good for one's diagnostic deficiency. The only way to acquit oneself in a case like this is for general practitioners of medicine to be frank with their patients as well as themselves and keep encouraging the patient to adopt all means possible to arrive at a feasible diagnosis to explain the symptoms.

Laboratory tests are not of so much value to make a diagnosis as to confirm one, a fact which brings the importance of the clinical side of medicine prominently forward. When the examination of a test meal shows diminished acidity, absence of free hydrochloric acid, presence of lactic acid and the Boas-Oppler bacilli, the rule in carcinoma of the stomach, it must be remembered that in the absence of obstruction and dilatation, lactic acid and Boas-Oppler bacilli may be absent and the total acidity and hydrochloric acid not be diminished, or even be increased, and still cancer be present. Also, that diminished acidity and absence of free hydrochloric acid most commonly exist without the presence of cancer. Radiographic examinations after a bismuth meal are valuable mostly according to the ability of the interpreter of the plates and the one who makes the fluoroscopic examination, added to which are matters of technique. Many false diagnoses have been made in the enthusiasm of the X-ray method of examination. The glycyltrpotophan tests, which depend upon the fact that the stomach secretions do not split up the proteids further than to peptones, any further chemical process requiring an additional ferment not normally found in the stomach, although such a ferment is present in cancer cells, is not possible of much value in diagnosis. Here, there is a great element of uncertainty because saliva or blood present in the stomach or the regurgitation of the duodenal contents into the stomach would make the test positive; and, furthermore, the test depends upon a delicate color reaction which, in doubtful cases, makes the final decision uncertain as to whether the color change is sufficient or not to be positive or otherwise. The agglutination tests and cobra venom tests on which some work has been done are not yet sufficiently developed to be of any clinical value.

Further uncertainties exist in the radicalism of some surgeons in the treatment of cases of ptosis and intestinal toxemias by surgical methods. The removal of all appendices, whether diseased or not, because they have caused persistent gastric distress in some instances and might be the cause in the present one concerned, is not a safe medical or surgical procedure. Not every person who has tenderness in the right iliac fossa necessarily has an appendix the removal of which will cure the gastric symptoms, for Jaskson's membrane more or less complete,

Lane's kinks, insufficiency of the ileocecal valve, dilated and mobile cecum, typhlitis and perityphilitis accounts for a host of them, and operations here are proverbially dangerous to one's reputation in the fulfillment of promise of cure. Operations performed upon adhesions in the abdomen wherein no obstruction exists often leave patients with more adhesions than existed before the operation. Other misfortunes are the drainage of a pathological gall bladder, leaving other sources of infection of the abdomen untreated, particularly chronic excessive intestinal putrefactions, and with these should be mentioned exploratory incisions to see if something may be found rather than those performed for some certain definite reason.

All these and many more conditions in the silent tomb of the abdominal cavity are confusing matters of diagnosis, to which today another important addition should be mentioned, which at the present time is not well known and requires clinical, operating room and dead house experience to be taught one, and that is (whatever Moynihan and others may say or write to the contrary) one, two or three-hour pain after eating is as many times due to gastric atony, hyperchlorhydria, gall bladder pathology with duodenalgia or chronic pyloritis, with or without extra-gastric adhesions, than it is due to gastric or duodenal ulcer.

THE ACID INTOXICATIONS.

In spite of the great amount of research and the advances made in the knowledge of the processes of metabolism and of their perversions, as well as in the causation of the intoxication, says the *New York Medical Journal,* little is yet known that seems to be of lasting definiteness.

The best known of the autointoxications are the acid intoxications, the acidosis. Experimentally these can be produced by feeding an alkali and ash free diet, when the sulphuric and phosphoric acids must combine with the fixed cations of the body tissues. Here also in attempting to neutralize the acid condition ammonia is withdrawn from the urea content, giving a high ammonia content, so that the amount of "acetone bodies"—acetone, diacetic acid and beta oxybutyric acid—can be gauged by it. The most important and common condition in which these acetone bodies are found is diabetes mellitus. The acetone found here is believed to be due to an incomplete oxidation of food, particularly the fats and in all likelihood also the proteids, and a lessening in the utilizing power for the carbohydrates. Carbohydrates act as an intermediary to the burning up of acetone into carbon dioxide and water; in other words, it is normally a catalytic agent. This principle accounts for the likelihood of the strict withdrawal of carbohydrates, in the treatment of diabetes mellitus, causing the production of the acetone bodies, and is the reason why, on the supervention of the acetone condition, that carbohydrates are given, so that even though there is a defective utilization of them, they will by sheer quantity force the utilization of some of the carbohydrate for this intermediary capacity. The sugar utilizing power is controlled by the pancreas in its role as an organ of internal secretion, this power lying in the islands of Langerhans. It is further believed that the pancreas inhibits the output of sugar so as to be within the utilizing power, and that the adrenals are acceleratory in this respect.

While the acetone bodies are commonly associated only with diabetes, they are found in other conditions in which the sugar output is not a feature. Of these the toxemia of pregnancy is the most important, and is receiving a great deal of study. Here also the ammonia content is high. The symptoms include mental torpor and somnolence, while coma, though it occurs, is not common. Other conditions, such as fasting, certain febrile conditions, carcinomatous cachexias, some psychoses, etc., show acetone, which it is believed is due to diminished carbohydrate utilization caused, however, by the diminution of all the body functions.

The acetone bodies have also been mentioned as causative toxic factors in such little understood conditions as migraine in adults and cyclic vomiting, its prototype in infancy. And while the dietary indications in the treatment of these conditions seems to point in that direction, yet the nervous or neurotic theory of causation is most commonly held.

THE DANGERS OF RADIUM.

DANGERS OF RADIUM.—The dangers of radium have been known ever since Prof. and Madame Curie announced its discovery to the world. Its powerful rays had been found to destroy life or modify growth in a most amazing way. It was known to cause deep intractable ulcers in the skin by an exposure of several hours. In spite of all this knowledge, according to *American Medicine,* the nurses at the Radium Institute in London have been handling it with an utter recklessness which indicates ignorance of possible harm. Almost everyone in the institution has been injured —the nurses who handle the material being the worst sufferers. The effects are not noticed for a couple of weeks, when the skin peels off painlessly as after sunburn, the finger nails become brittle and split down the center, ulcers appear and the hands become totally anesthetic, but very susceptible to heat or cold. As the rays penetrate the ordinary materials, it is useless to wear gloves which protect from X-ray, and the sufferers are compelled to give up the work. All this reminds one of the early history of X-rays, and we must be prepared for the announcement that cancers are appearing on the hands of those who have been the most reckless. In treatment, the rays injure the abnormal cells first, but in time will destroy the normal, so we must expect to hear of ill results of overtreatment. It is therefore time to utter a warning to the public against the too optimistic tone of the popular articles which have been appearing. Not only does the treatment unaccountably fail in many cases, or partly fail as above mentioned, but there are also relapses reported, and we are not informed of the ultimate fate of many of the old cases. One man has been quoted as stating it to be a sure cure whereas he is not at all certain as to the results. The whole subject is too new, and while we would be criminal to neglect it, we must not raise false hopes. There is no justification for the present hysterical praise in the lay press, and it must not be made a mystical fad, a course which has wrecked many another promising method.

RACE BETTERMENT.

Four hundred men and women of prominence, comprising the first representative group of scientific experts ever gathered in America for that purpose, met in Battle Creek January 8-12, to assemble evidence of race deterioration and to consider methods of checking the downward trend of mankind. The meeting was known as the First National Conference on Race Betterment. Through the co-operation of the press, the objects and aims of the Conference have been very widely disseminated and a resultant influence for better race ideals is anticipated.

Already, the effect of the Conference is apparent in Battle Creek where popular interest in mental and physical efficiency was awakened by a series of public school tests which showed an alarming percentage of defective children in all grades.

The Conference had its inception in the efforts of four men, particularly interested in race betterment—Rev. Newell Dwight Hillis, pastor of Plymouth Church, Brooklyn, N. Y., Dr. J. H. Kellogg of the Battle Creek Sanitarium, Sir Horace Plunkett, former minister of argiculture for Ireland, and Prof. Irving Fisher of Yale University. At the invitation of a central committee chosen largely by these men, fifty men and women of national prominence in the fields of science and education consented to share in the program. Their addresses, together with open discussion of many of the points considered, constituted a very widespread study of all phases of evident race degeneracy and the advocacy of many ideas of reform. Some of the suggested methods of improvement are frequent medical examination of the well, outdoor life, temperance in diet, biologic habits of living, open air schools and playgrounds, the encouragement of rural life, the segregation or sterilization of defectives, the encouragement of eugenic marriages by requiring medical certificates before granting license and the establishment of a eugenic registry for the development of a race of human thoroughbreds.

Some of the interesting statements of the Conference are summarized as follows:

"It will be no easy task to improve the race to the point where there will be no dependent children, but the elimination of

the dependent child will be one of the best indices of the superiority of our national stock."—Dr. Gertrude E. Hall, New York State Board of Charities.

"I believe that a great deal can be done by publication of facts as to the physiological effects of alcohol, in the way of inducing educated and intelligent people to conserve their health by limiting the use of alcohol or giving it up altogether."—Henry Smith Williams, Author.

"Eugenics does not eliminate romance. We eugenists believe romance should be retained. Through the past it has proved a good thing."—Prof. Roswell H. Johnson, University of Pittsburgh.

"In order that the race may survive it will apparently be necessary to make a eugenic selection of healthy mothers and to provide that the cost of bearing and rearing children shall be equally shared by all.—Prof. J. McKeen Cattell, editor, *Popular Science Monthly*.

"The boys are learning that they have a calling just as sacred as the call to motherhood and that is the call to fatherhood."—The Very Reverend (Dean) Walter Taylor Sumner of Chicago.

"The negro in the south, with all his weaknesses and handicaps, is not yet in any large measure in the ditch."—Booker T. Washington, Principal of Tuskegee Institute.

"We must cultivate pure blood, instead of blue blood if we would develop a race of human thoroughbreds."—Dr. J. H. Kellogg, Superintendent Battle Creek Sanitarium.

Among those having a share in the program were: Rev. Newell Dwight Hillis, Jacob Riis, Judge Ben B. Lindsey, Booker T. Washington, Dr. Victor C. Vaughan, Dr. S. Adolphus Knopf, Dr. C. B. Davenport, Dr. J. N. Hurty, the Very Reverend (Dean) Walter Taylor Sumner and many others of equal prominence.

THE CRYING BABY.—There is, of course, no such a thing, *per se*, as "three months' colic." It is, however, a well known fact that many babies the first few days of their lives start their parents in on a troublous life, and this may persist several weeks, and even until dentition. Most of the remedies directed toward the alleviation of so-called three-months' colic are unavailing. In a goodly per cent. of cases of crying babies the youngsters are healthy, are fairly well nourished and may grow lustily. When the baby does not thrive and gain in weight, the untoward condition should be sought out and remedied. In the great majority of cases of this class the trouble is due to wrong habits engendered during the first few days and then, unfortunately, perpetuated for days and weeks thereafter. These nearly always relate to improper feeding. The more common trouble is feeding too often, or "every time he cries." Usually the rest and sleep of such a child is all out of adjustment. The stomach of the new-born babe is a small and delicate affair, and what goes into it, and when and how, are matters of vital importance. Nearly everything depends upon the way the babe is started out. Improper methods of feeding can in a few days' time engender habits which cannot be broken up for weeks or months. It would be well to instruct every mother as to the capacity of her infant's stomach, which is as follows:

At birth, one ounce.
Two weeks, two ounces.
Three months, four and one-half ounces.
Six months, six ounces.
One year, nine ounces.—*Medical Summary*.

Doctors who take narcotics may be deprived of their licenses if a new bill, now pending in New York State, becomes a law. While such a law would doubtless work a hardship upon many good men, whose value as practitioners is not greatly impaired at present, we are not sure that on the whole the suggested law might effect the "greatest good to the greatest number." But how about the "booze-fighting" doctor? He ought to be included, surely.—*Exchange*.

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URINARY HEMORRHAGES: DETERMINATION OF THE ORIGIN.*

By CLARENCE MARTIN, M. D., First Lieutenant Medical Reserve Corps, U. S. Army; Formerly Clinical Assistant St. Peter's Hospital for Stone in London; Member Berlin Urological Society; Association of Military Surgeons; etc., etc., St. Louis, Mo.

There is no condition in which precise methods are so essential to successful treatment as in a hemorrhage originating at some point along the urinary tract. Whilst it is true that oftentimes hematuria is of minor importance, being an accompaniment of nothing more unusual than a gonorrhea, yet, on the other hand, it must always be remembered that a hematuria may, and frequently does, possess the gravest significance. Owing to this gravity of a considerable portion of urinary hemorrhages, each case—unless the causative factor be plainly obvious—should be considered serious enough to warrant a most rigid examination for the purpose of making an exact determination of the site and, if possible, of the character and extent of the lesion involved.

The advantage of thoroughly going into a hematuria will be best appreciated when we remember that the early recognition of the lesion may be essential to its successful treatment. For example, take the case of a vesical papilloma. Such a growth, even though it be shown histologically to be benign, is invariably potentially malignant, and one can never recognize the beginning of frank malignancy. The important point here is, that since a hemorrhage is always the first symptom of a papilloma, any hematuria, particularly if it be of a terminal character, may be indicative of this condition and thus signal the opportune time for operation.

Until recent years the great disadvantage genito-urinary surgeons have had to contend with in hematurias, has been the difficulty of making a definite determination of their source and the character of the causative lesion, but at the present day, his precise diagnostic instruments are more and more obviating this hitherto experienced difficulty. Thus, by means of the cystoscope and X-ray, it is comparatively easy to fix the source of hemorrhage, but, however, to ascertain the exact character of the pathological process involved may not be nearly so simple.

Whilst guess-work in urinary hemorrhages is absolutely unwarranted, yet, by paying close attention to the gross appearance of the hemorrhage and to the symptoms accompanying it, if there be any, one may make a fairly good guess as to the source of the hemorrhage, at least. Thus, we may say that a thoroughly mixed hematuria is of renal origin; if mixed but showing more blood toward the end of micturition, the source is a serious lesion in the bladder. In the case of a sharp terminal hemorrhage suddenly making its appearance and as suddenly ceasing, with no other symptoms, the urologist at once thinks of papilloma. Oftentimes there is a long interval between these hemorrhages. If, in connection with a history of repeated hemorrhages, a continuous hemorrhage takes place, accompanied by pain and frequency, with necrotic particles in the urine—one is safe in diagnosing malignancy of the bladder. And in addition to the above, if one is able to detect a sclerosis at the base of the bladder above the prostate, then the diagnosis of malignancy is com-

*Read before the Effingham Co. (Ill.) Med. Society, January 13, 1914

plete. Such cases as these are very hard to cystoscope owing to the irritability of the viscus and the increase of hemorrhage upon the instrument's introduction. The practical point in differentiating renal from vesical hemorrhage is: Vesical hemorrhage is terminal in character; a total hemorrhage comes from the kidney or from a malignant growth in the bladder in which latter case there will be the further distinguishing symptoms of pain and frequency. Blood originating in the posterior urethra is also terminal; it amounts to but a few drops and most commonly is accompanied by tenesmus. A hemorrhage preceding urination is so obviously urethral—and so infrequent—that but a bare reference to it is necessary. Such hemorrhages are due to growths, for instance, polyps, papillomata, carcinomata, or an acute infection.

In some quarters it is contended that the microscope is of satisfying service in differentiating urinary hemorrhages, the appearance of the epithelial cells accompanying the blood being drawn upon to furnish this information. Thus, if the microscope disclose cells typical of the renal pelvis, then one would be led to the assumption of pelvic origin. If there were renal cells, together with casts, then one would think of renal hemorrhage. And so on down the urinary tract. However, this diagnostic method presupposes that each variety of epithelial cells found in the urine has a sharply limited derivation and inevitably points to a lesion within restricted limits. That the histological elements of the various zones of the urinary tract are susceptible of a differential recognition is undoubtedly true, but it seems to me that a glaring defect in the method lies in the fact that cells from widely separated zones may be found in the same urine.

The prime aim, naturally, in hematuria is to stop the hemorrhage; hence, it is all important to know the exact location of this bleeding point if we are to make the most effective application of our therapeutic means. To this end we employ either an urethroscope or a cystoscope.

If the blood is coming from the anterior urethra the best instrument to use is an aerourethroscope with an external source of light. For this purpose I am partial to the Wyndham-Powell urethroscope. Directly after introducing the tube, the urethra is ballooned, thus permitting an easy approach to the deeper parts of the canal, the instrument being gradually advanced down into the distended canal In this way a polyp, papilloma or other bleeding point is recognized before being disturbed and further traumatized by instrumentation.

The urethral zone in which bleeding most commonly arises is the prostatic portion. A hemorrhage originating in this segment is due to one of several causes. Thus, moderate bleeding can come from a highly congested verumontanum, minute vessels in its swollen mucosa rupturing as a result of the expulsive efforts of the urethral walls. Or, much less frequently, a tuberculous focus in the prostatic urethra is the cause of the bleeding. However, the most common cause of hemorrhage arising in the prostatic urethra is, it is needless to say, a gonorrheal process.

The only instrument which permits of a careful inspection of this region and a fairly accurate differentiation of pathological changes in the posterior urethra, is an irrigation-cystoscope—either the Wossidle, the Goldschmidt or Buerger's cystourethroscope, the latter of which is most popular in this country. With the cystourethroscope there is a clear definition and satisfactory magnification.

Leaving aside for the moment the possible presence of stone or a tuberculous cystitis, the most frequent cause of a terminal hemorrhage is an inflammatory state of that part of the urinary mucosa lying between the interureteric ligament and the membranous urethra, including the circumferential margin of the internal sphincter muscle. In posterior urethritis or urethrocystitis, this type of bleeding is common. If bleeding also follows copulation then we may be sure that inflammatory changes have taken place in the verumontanum. Just a few days ago I urethroscoped a patient who came to me complaining of a painful sensation just behind the pubic bone, especially upon micturition, and a slight terminal hema-

turia. The picture seen upon examination with the irrigation-urethroscope was identical with the urethritis granulosa described by Frank, Wossidle, Lohnstein and others. In the diagnosis, as well as the treatment, of these granulations, a close vision, irrigating-urethroscope is absolutely essential.

In dealing further with the possible causes of hemorrhages originating in the immediate region of the vesical orifice, polyps and papillomatous excrescences on the margin of the internal sphincter muscle must be remembered, for very often they furnish the source of the blood. It is safe to assume that terminal hemorrhages coincident with acute urethral diseases, are due to the infection, but, at any rate, such hemorrhages are not sufficient warrant for the introduction of instruments into the bladder for the purpose of more positively ascertaining the cause of the bleeding. If this persist after the apparent cure of the urethral disease, then and only then, may diagnostic instruments be resorted to.

Benign and malignant growths of the prostate gland are responsible for a considerable percentage of urinary hemorrhages. Ordinarily, such hemorrhages do not occasion any great difficulty in the way of diagnosis, for there are other diagnostic features that aid one in arriving at a correct conclusion. Thus, the age of the patient, the difficulty of micturition, loss of forces, nocturnal frequency, determination of residual urine, dribbling, and enlargement detected upon rectal examination, all point to the cause of the hematuria. If now we carry the examination still further and make a visual inspection with either the cystoscope or irrigation-urethroscope, we can readily find the bleeding point unless the hemorrhage is so great as to cloud the distending medium. a freshly bleeding spot or a clot on a prominent point of the projecting gland making the diagnosis plain. A practical point to remember is that hemorrhage of prostatic origin is more often due to simple adenoma than carcinoma. A severe vesical hemorrhage occurring in a man beyond 50 should always arouse suspicion of malignancy, not necessarily of the prostate but of some point within the bladder. Rectal palpation will give much information in this connection. Prostatic carcinoma gives to the palpating finger a characteristic feeling of stone-like hardness, with loss of margin, the induration extending out into the contiguous structures, and the gland is immovably fixed. Or it may happen that the finger will detect the characteristic brawniness on the floor of the bladder at a point above the prostate. Some months ago upon cystoscoping an old man, presumably a prostatic, the first thing found was a fungating primary carcinoma of the bladder wall, above and to the outer side of the left ureter. The patient was high up in his sixties. He had had frequency and pain during both night and day for several years, and for some time had been passing blood. Although all the vesical symptoms had been attributed to the prostate, yet the cancer was the main cause of the old man's distress. By temporizing and palliating, this old patient was permitted to pass from a fairly safe operative stage to one where radical operation was absolutely out of the question. As a rule, prostatic hematuria is terminal, the exceptions to this rule being so few as to be negligible.

At this point it must be remembered that frequent cause of urinary hemorrhage, calculus, is in many cases not only an accompaniment but a consequence of prostatic hypertrophy, and, in fact, in the latter condition it is usually the sole cause of the bleeding. In younger persons, in children particularly, bladder hemorrhage is almost invariably due to stone or tuberculosis, with papillomata following far behind them in causative rank. As a diagnostic means in stone, the cystoscope is far preferable to the stone-searcher when its use is possible. Handled skilfully the former instrument is no more likely to occasion distress than the latter, and the findings are absolute. If restricted to a searcher the physician may easily miss an encysted stone or one lying in a pouch behind an enlarged prostate.

I was in at the finish of a curious hematuria just a few days ago. There was sent to me for examination a patient who for

a week or more had been suffering from hematuria and intermittent pain radiating down the right side, this at times taking on appendiceal characteristics. For a day or two just preceding my examination, the pain had been particularly severe followed by sudden cessation. The morning of the day of my examination the patient passed a typical ureteral stone. Cystoscopic examination disclosed a torn ureteric orifice, the stone producing the laceration in making its exit.

The detection of papillomata giving rise to hemorrhage is easy, as is that of clearly obvious carcinomata, provided, of course, that it is possible to make a cystoscopic examination. When hemorrhage is continuous or aggravated through instrumentation, irrigations of nitrate of silver often suffice to staunch it until the examination is finished. Hemorrhage is, naturally enough, a frequent accompaniment of cystitis, but the severe tenesmus characterizing acute cystitis makes it comparatively easy for the physician to fix the source of the bleeding. A further examination is not advisable until the vesical symptoms have subsided, and then if the bleeding has ceased, cystoscopic examination is not warranted, unless suspicion points to a tuberculous origin of the cystitis. Laboratory aid is quite necessary in finding the exact bacteriological factor most actively concerned in a cystitis of which there is no mechanical cause. Often this is the only means of differentiating a tubercular cystitis from other forms.

Roughly speaking we may differentiate vesical hematurias as follows: A terminal hematuria with pain at the end of micturition is suggestive of stone or tuberculosis, especially in young persons, whereas, a terminal hemorrhage without pain indicates tumor of the vesical wall, a papilloma for instance. A terminal hematuria with fairly constant pain which in some instances increases toward the end of micturition, or which, at other times, reaches a height corresponding to the maximum of bladder distension—points in the direction of tuberculosis. In this last type of cases the patient will also complain of pain just behind the pubic bone. In advanced tubercular cystitis the use of the cystoscope is practically impossible, for the bladder is absolutely intolerant to the distending fluid. General anesthesia will have to be resorted to and it, too, at times fails to aid us in securing a greater distension.

Before quitting the subject of hemorrhages originating in the bladder, I want to speak of varices in an otherwise normal bladder wall, a condition mentioned and pictured by Jacoby in his Atlas of Cystoscopy. More than once during a cystoscopic examination I have seen large superficial vessels bulging out from the mucosa, looking as if rupture were most imminent. I have also seen small clots attached to the bladder walls, the reason for the hemorrhage being not quite clear. Not long ago Frank Kidd of London, described a case of purpura of the bladder walls, and Viertel has written of a condition he saw in two instances and which he called vicarious hemorrhage. He saw blood issue forth from the apparently intact walls. However, such cases as these are very rare indeed.

As to the information to be secured from the size and shape of coagula, let me say that in the differentiation between vesical and renal hemorrhages, but one form of coagula has any genuine diagnostic significance. If your patient is passing long worm-like clots, and at the same time is experiencing colicky pains in the renal region, the assumption of a renal hemorrhage is justified. Two recent experiences of mine in this direction were of more than ordinary interest. In one instance I was going over a case of suspected renal growth with a colleague. My cystoscopic examination had shown that the hemorrhage was from the right kidney. During our examination the patient emptied his bladder. In the urine was a long coagulum. This when laid out gave an almost perfect cast of the renal pelvis and ureter. The case was a hypernephroma. The other experience I refer to was also unique. Both of these cases demonstrate two points clearly: 1st. That such clots form in the ureter; 2nd. That one must be extremely cautious in palpating a kidney thought to be malignant.

Briefly, the man gave a history of repeated hematuria and colic, the latter passing away after a short duration. I cystoscoped the patient but found nothing of interest. No bleeding was to be seen. Both ureters were normal; both effluxes normal. Upon removing the cystoscope I proceeded to make a thorough examination of the kidney region to ascertain the extent of the growth, when suddenly the patient complained of colic on the same side. Blood was found in the urine. Thereupon, I again cystoscoped the patient and found a worm-like clot protruding from the ureter of the diseased side, the vermicular movements of the ureter forcing it into the bladder. The bleeding was entirely due to the manipulation of the kidney during palpation. This, too, was a hypernephroma.

As indicated above, the microscope may lend some aid in locating the site of the bleeding spot by demonstrating the character of the urinary cells found. Thus, an overwhelming abundance of cells typical of the renal pelvis would naturally direct suspicion toward the pelvis as being the source of the hemorrhage. Again in a case of renal bleeding in which both X-ray and search for tubercle bacilli were negative, a large number of leucocytes would indicate stone. A further instance of the microscope's value in differentiating hemorrhages is pointed out by Gumprect who maintains that fragmentation of the red blood corpuscles is a phenomenon characterizing a renal hemorrhage. His explanation is that the urea in the renal epithelium exerts a partially destructive action upon the corpuscles.

Let us now turn to urinary hemorrhages demonstrated to have a renal origin. We shall furthermore assume that it has been determined whether the blood comes from one or both kidneys, and that the single remaining question is the cause of the bleeding. As a rule hemorrhage from a non-suppurative renal lesion has other features that turn us in the direction of a correct diagnosis. Thus, for instance, in the majority of instances the bleeding in these cases is bilateral, the urine contains casts, cardiovascular changes are detected, slight edema may be present, and at a time when the urine is entirely free from blood, albumin will be found.

Fixing our attention on surgical diseases of the kidney, the bleeding is generally unilateral, and is due to an ascending or hernic infection (staphylococcus, pneumococcus tubercle, colon, streptococcus), stone, tumor, the varicose condition first described by Fenwick, new growths (hypernephroma, carcinoma, sarcoma), and polycystic kidney. A small stone impacted at some point along the ureter is also a frequent source of bleeding. Here the subjective symptoms together with the X-ray will usually make the diagnosis clear. Cystoscopically, renal hemorrhage will be manifested at the ureteric orifice by the emission of a dark jet corresponding to the efflux time, unless the hemorrhage be profuse or coming entirely from the pelvis of the kidney. In such instances, it will, of course, issue forth in much greater quantity. The diagnosis of a renal hemorrhage due to a tuberculous infection in its incipiency, before the bladder is secondarily involved and when perhaps the affected kidney is entirely free from subjective symptoms, may be very difficult. Tubercle bacilli are not always found in such cases, and sometimes repeated bacteriological examinations of the sedimented urine together with guinea-pig inoculations, are necessary to establish the diagnosis. Later on when the vesical mucosa has become attacked of course the diagnosis will be less doubtful. In hemorrhage resulting from the acute virulent infections, palpation of the affected region will cause pain and the organ may be enlarged to a point where it can easily be felt. General symptoms of a septic character will prevail. It should be remembered that renal stones can be carried for years without giving rise to hemorrhage or pain, so upon the appearance of a symptomless renal hemorrhage it must not be taken for granted that a stone does not exist. The X-ray must be called into service to settle the question. In tumor growth, hemorrhage becomes an important sign when the neoplasm involves a papilla or opens into the pelvis. Bleeding is an earlier sign of carcinoma than it is of hypernephroma, al-

though a moderate congestive hemorrhage may be an early sign of the latter. In hemorrhages due to renal growth, a tumor will usually be found, in fact enlargement in the lumbar region may be noticed by the patient long before hematuria occurs. Upon ulceration into the renal pelvis, profuse hemorrhage is possible with the distinctive clot-formation referred to previously. The usual cachexia of malignant growth is a feature here. In polycystic disease the hemorrhages will not be as marked as in malignant disease; usually they are bilateral and both kidneys are enlarged. The varicose condition of a papilla described by Fenwick as well as a similar state in the pelvis, present marked differential difficulties. In some unaccountable hemorrhages, mayhap listed as "essential hematurias," an oxaluria could be the cause, unusually large oxalate crystals setting up an irritation of the lining membrane of the uriniferous tubules, and thus causing hemorrhage. Hematuria due to drugs I shall not speak of, as the cause thereof will be plainly apparent.

3700 Morgan Street.

NO SPECIFIC CURE FOR TUBERCULOSIS.—In spite of the statements of a number of individuals who have recently claimed that they have found a "cure" for consumption, The National Association for the Study and Prevention of Tuberculosis, in a bulletin published recently, declares that there is no information at hand to justify the belief that any specific cure for tuberculosis has been discovered which deserves the confidence of the medical profession and the people.

Backing up these statements, the United States Public Health Service declares that outside of the three essentials in the treatment of consumption, namely rest, fresh air, and good food, "there is no drug known, however rare or expensive it may be, that has any curative action in this disease, and all remedies advertised as such are to be avoided. Patent cough medicines are harmful; radium, X-rays or electricity in any of its forms have no special value in tuberculosis of the lungs. No serum has yet been found that will cure it, and there is no plaster or poultice which has an effect on the disease itself."

The National Association is planning in the near future to institute an extensive campaign for the suppression of the numerous fake consumption cures, which are annually cheating the public of the United States out of no less than $15,000,000 and besides are depriving numerous innocent victims of the chance for a real cure. Consumptives who are taking remedies of this character will be warned through advertisements and in other ways against the danger of such procedure.

Any person desiring information with regard to consumption cures or the treatment of tuberculosis may obtain literature and advice from the office of The National Association for the Study and Prevention of Tuberculosis, 105 East 22nd street, New York City.

MAY CENTURY NEWS NOTES.—Commuters with their heads full of gardening problems, will be interested to read of the Government's heroic struggles against the gypsy moth and other pests, to be described in the May *Century*, by Harold Kellock under the title of "The Winged Armageddon."

Have you heard of the Lunists who go one step further than the Cubists or Futurists? This cult will be described in the May *Century* in a story called "The Rise of Menai Tarbell," by Thomas W. Wilby.

James Davenport Whelpley, author of "The Trade of the World," will ask and answer in the May *Century* magazine the question "Are We Honest with Japan?"

GALL STONES.

By J. D. Bloom, M. D., New Orleans, La.

The lithiasis that is implied in this condition associates changes in the bladder, for the gall and its connecting passages, a result of an abnormal condition represented in a disturbed physiology.

In these concretions is a coloring matter combined with the calcium salts of the phosphatic and carbonate variety with which is cholestrin in irregular amounts. When they consist largely of cholestrin, they are soft light colored and will burn in a flame. Whilst they are contributing causes of a possible functional nature (in an excess of lime and deficiency of sodium salts which lend to a precipitation) the disease is by way of an infection to the mucous membrane which tends to an excess of mucin and altered function rather than an unexplained idiopathy.

In the days of Galen, gall stones were regarded as a result of bile coagulation resulting from a superheated liver, which was merely in surmise; and to Morgagni is credited the first view of a chronic catarrh as the caustive influence. The origin of the two substances entering into the stones, as the chief ingredients, as shown in pathological conditions, are derived from the mucosa of the gall-bladder. An advocacy of this theory of provocation is minus the functional influence originally maintained.

In health the human bile is sterile and remains sterile so long as it flows unhindered. That the typhoid bacillus has been found in the center of gall stones would seem to tell of a cause and effect on the mucous lining membrane.

A frequent causative reasoning, which is the Naunyn theory, involves conditions mentioned and holds for an increase in the secretion of solids rather than a precipitation from an altered bladder mucous membrane.

Strange as it does seem, in civilized communities, biliary concretions are more frequently found. The bladder locality is the more frequent one, the ducts infrequently, and biliary intestinal fistulae are, surprisingly, of frequent find.

The colon bacillus, the typhoid, even years after the primary infection, is very often found to exist. A purposed infection has contributed to the production of stones; then, too, the proportion of cases found in various countries differ, which is of interest to remark. In Europe they are found in fully ten per cent. of all autopsies. As many as five thousand stones have been found in the gall-bladder of a single case and Monyhan reports a case of twenty-seven hundred. A single calculus when found in the gall-bladder is usually quite large, as shown in

PICTURE A.

picture A and when of small size may be in large numbers, varying in size, and influenced in shape by a mutual pressure.

When existing, their composition is much the same, differing only in size. In general, it is said that cholestrin predominates in the stone of any size.

Bile acids, from what is known of their history, cannot be regarded as excreta; they have some function to fulfil. It has been suggested that they serve as a mentsruum for dissolving the cholestrin, which must be regarded as an excretion. Then, too, they facilitate the absorption of fats in the intes-

tines, as shown by the fact that when this fluid is cut off from the intestines, fat absorption is very materially diminished. Naunyn's theory of gall-stones is receiving a clinical and pathological support, though contrariwise foreign bodies

PICTURE B.

may cause the condition; also round worm, and a needle has been seen as the cause. The nucleus is more frequently soft, of yellowish alkaline fluid in a cavity-like formation, or calcium of the bilirubin which is putty-like and very soft.

That biliary concretions represent an infection and cause the precipitation through a catarrhal process is shown by the conditions cited and furthers the surmise of a local cause effect. It is said that cholestrin deposit continues from the mucous membrane after the bile ceases to enter the bladder in instances that the membrane is a diseased mucous membrane. The same elimination frequently occurs in bronchitis and speaks for the ill-determined character of cholestrin excretion.

Whilst the gall-bladder is the common find of a stone location, in order of mention, the cystic, common, and hepatic ducts contain them; occasionally they are found in the intra-hepatic ducts, but very rarely. This condition of stone formation is actively an abnormal one and attended with many possible complications that are the harm in themselves, both from a functional and degenerative effect. The anatomic parts about the gall-bladder may become agglutinated and an exit for the stone or stones may follow through perforation into the abdominal cavity, stomach, intestines, liver abscess, portal vein, urinary passages and even into the lungs.

It is important, therefore, to determine the presence of biliary calculi though often a very difficult matter. The possible exception to each and every symptom that may exist, literally has the diagnosis hang on a suspicion and the only definite sign beyond contradiction is the seeing and feeling the calculus. A faceted stone passed by the rectum is a confirmation of the suspicion of remaining stones. It is said that stones have been palpated on a forcible inspiration by the hand on the gall-bladder. How splendid is this diagnosis! To all that be known, it is in the individual case that the judgment is to be rendered.

Whilst aspiration of the bladder has

PICTURE C.

been recommended as favoring the passage of bilious stools, which is supposed to be an evidence of the existence of stones, it is in itself a possible danger and a negative warrant of doing as shown by the following case report: H. D., never suf-

fered with typhoid fever to his knowledge, had an attack of biliary colic ten years ago, followed by a recurring attack every two or three years since. In the last six months, he has had four light attacks, jaundice remaining since the second last. This symptom alone caused anxiety and for which counsel was asked. I urged the operative treatment to which, after a time, he consented. In his case, the gall-bladder was displaced by adhesions from which it was delicately extricated, as its fullness with stones was perceptible to the feel; from the bladder there was removed sixty stones from which this picture was taken.

Arranged in the picture as found in the bladder, the larger stones occupied its pelvis and the smaller ones the fundus as is usually found. The Mayo-Robson incision was made and the patient made a complete recovery.

The Courvoisier law, which obtains in fully ninety per cent. of cases, militates against a reasoning, other than the operative, for a benefit that is to be of ultimate good; though the instance recited was in opposition to this diagnostic sign and is of the remaining cases, rarely a difficult number to diagnose when the symptoms are passed in review.

The inciting cause of a process that represents a catarrhal condition and in effect associates a loss of function, means that we must "Accuse not Nature, she hath done her part."

WHY LOBSTERS AND 'RABBITS' AID DIGESTION.—Medical information, like many systems of philosophy, is eminently satisfying in one regard—that with patience one can find proofs to support any pet habit or even little vice. Now comes to the front a Carlsbad doctor who warns his colleagues gravely against insisting on too well-measured a diet. Especially is he aroused against the false belief creeping into the European war departments that on a campaign soldiers can be fed on tabloids which will contain in highly concentrated form the nutritive qualities of a large quantity of food.

There are a large number of poisonous products that are constantly being discharged by various organs of the body, in order to keep up the health of the body, that these should not be retained in the intestines. But, Dr. Lorand points out, the wave-like motion of the intestines is primarily mechanical, and peristalsis (which is an opening and closing movement, shoving the food along) cannot continue unless there is some bulk of food on which it can take effect.

Hence follows the singular result that if we ate only the food we ought to eat, that solely essential to nutrition, we should be worse off than if we ate a great deal of material that has no nutritive qualities what ever. Vegetables, for example, rarely have much nutrition, yet they are among the most valuable aids to digestion, because the cellulose undergoes few changes and yet renders it easy for the intestines to carry off products that are no longer needed in the body, whereas meat and finely ground cereals are absorbed by the body with but little residue.

The lobster, of the "lobster palace," and the "rabbit," of Wales, must therefore be ranked as valuable aids to dietetics, and those whose tastes run in those directions may solace themselves during the subsequent attacks of indigestion with the thought that they are doing themselves good by not being too precise in the selection of food material. —*Southern Practitioner.*

WALKING AS A MEDICINE.—Recommending walking as a medicine, particularly at this season of the year, an eminent physical culturist gives many sensible suggestions as to proper and comfortable apparel. Thick shoes, laced well up above the ankle, with broad and fairly heavy soles and broad heels, for both men and women; any old suit of clothes for a man, and a short skirt for a woman, reaching only to the shoe tops—these are requisites for comfort.—*Exchange.*

SHOT-GUN PREPARATIONS OF MIXED BACTERIAL DERIVATIVES.

By ALFRED J. BUKA, M. D., Pittsburgh, Pa.

After a fair period of practice with the infections treated by the ordinary methods in conjunction with the bacterial preparations employed as specifics or adjuvants, the writer feels that it would be interesting to sum up his observations along a particular line, and to offer conclusions thereon. Quite a group of infectious diseases, more particularly those attributable to the diplococcus pneumoniae, diplococcus of Neisser, Friedlander's bacillus, staphylococcus, streptococcus pyogenes, Klebs-Loeffler bacillus, bacillus pyocyaneus, and tubercle bacillus, have been treated in their many phases and with their various complications by their especially recommended methods as well as with bacterial therapy. With a number of the diseases the conclusion, that bacterial therapy will simplify the solving of some of the more tedious and discouraging complications which arise in the respective invasions, and which fail to be reached very often by local or systemic methods, is firmly established. Being of the opinion that the nidus of irritation or infection in many of the infectious conditions is attacked speculatively, with the hope of possibly overcoming it, much damage is done; in some cases at the site of the disease, and in others constitutionally. In certain conditions radical methods are employed which in no way can be considered directly specific against a disease and decidedly destructive to the parts with which they come in contact. Again, in certain conditions of infectious origin the expectant method for the treatment of symptoms renders therapeutics a discouraging art.

To attack disease properly much dependence is placed upon the blood current, and the destructive action of the leukocytes against disease invasions is developing rapidly the actual worth of the field of bacterial therapy. It seems difficult for some physicians to realize wherein the value of the bacterial products lies inasmuch as their particular action is not understood. As some fail to realize the bacterialytic action in blood stream others fail to realize that this activity has its limitation and that specific stimulation for action against the particular germ of a disease is more correct and effectual than the recent efforts of shot-gun bacterial therapy.

It cannot be reasonably concluded that the germs associated with the specific germ causing the disease are the really harmful organisms when compared with the disease germ itself. If it were not for the very profound toxic and deteriorative properties of the specific organisms of the disease, the associated organisms would not flourish in the affected part. Therefore the primary efforts to combat disease must be those which should be directed to the overthrow of the specific germ invasion identified with the disease. Furthermore, under what would be called a normal physiological condition, the body is the host of germs of numerous varieties, many of which, under favorable conditions, would establish a pathological lesion. For the multitude of organisms of the diseased types, which occur promiscuously during health in the various parts of the anatomy, no efforts are made, by way of medication, to be rid of them, the natural forces of the body successfully combating these as a rule. During a diseased condition of the body it would appear, therefore, more advisable to directly combat the disease invasion itself and not to divide the forces. To directly assist and to facilitate matters for the circulation in its disposition of any accumulation, *e. g.*, by-products or waste materials, findings their way in the bloodstream after the destruction of the specific organism of the disease, would be more helpful than an attack upon germs unrelated to the disease.

It should be remembered that certain germs produce the disease which is accredited to them only under special, favoring conditions and in favorable areas, and that they rarely make themselves known in a pathological sense to the host when these are wanting. Diphtheria and tetanus, for example, are constitutional diseases, the or-

ganisms respectively growing in the respiratory tract and along the nerve sheaths during the production of their systemic manifestations. The toxins eliminated by these germs produce profound toxemias, and to overcome these the organism of the disease must be directly combated. Diphtheria is commonly aerobic and tetanus is anaerobic and as such they produce their most danger when properly environed. The diphtheria bacillus has been found in many parts of the body, but, with no pathogenic significance, yet when in the respiratory passages there is always a suspicion of its possible ravages and speedy precautions are taken. Only a specific germ derivative, the diphtheria antitoxin (made through the employment of the diphtheria bacillus alone) is the factor employed to combat the disease. So also with the tetanus bacillus. It might readily occur in the mouth, about the genitalia or in other parts and do no harm; yet, when inoculated into a puncture wound, it and no other associated germs necessitate speedy attention, and only a specific germ derivative (made through the employment of the tetanus bacillus alone) is the factor employed to combat the disease. In short, no other types of germs should in any way enter the preparation of a specific germ derivative. To assume that there is an importance attached to the germs, other than those causing the specific lesion, is an incorrect manner for establishing successful results from bacterial therapy. Furthermore, the writer believes that when there is a truly fulminating mixed infection, in which various specific germs are causing their specific disturbances, little can be accomplished toward the annihilation of all. Because many diseases may be, during some part of their course, an association of the specific organism of the disease with the others not directly identified therewith, it should not be concluded that a shot-gun mixture of dangerous bacterial derivatives, pushed into the system, will combat the disease for which they may not even be a bacterial derivative in the preparation to stimulate a selective action for destruction of the specific germ to which the disease is directly attributable. Bacterial derivatives of the several predominant types of infective organisms might be used, but a mixture, of which some of the organisms from which it is derived are unrelated to the disease type or dominant types, might better be withheld. It is well enough known that with too many irons in the fire, the fire is quenched, in other words, medication from too many directions kills the patient.

When the body is diseased, antibodies are formed in increased numbers and they are predominantly those meant for the preparation of the specific germs of the disease. If it is desired to help the combat against this invasion one would naturally endeavor in the surest way to stimulate a selective action against the germ causing the disease. Mixed bacterial derivatives may to some degree stimulate the leukocytes in the liberation of antibodies which shall select the germs of the disease if in them there be a derivative of the germ of the disease, but inasmuch as these products are made up of other germ derivatives the stimulation to leukocytosis becomes divided, and the formation of antibodies becomes likewise divided to comply with the variety of germs represented in the mixed bacterial derivative introduced into the blood stream. With a divided army (the leukocytes) endeavoring to do battle against a concentrated force (the specific disease) the attack is naturally weak. If the leukocytes are stimulated to the formation of antibodies of the disease germ alone, the forces combined can more readily overcome the infection while the guerillas and bandits (other organisms than the specific disease germs which follow the invasion) will soon be forced into submission, more positively so, because they are constantly being overcome in health. As mentioned before, organisms of a surprising variety occur in parts of the anatomy during periods of comparative health with no pathological significance whatsoever, therefore they should merit little attention and be considered of decidedly less significance than the specific germ during disease. It would be very harmful or at any rate of very little use to endeavor to battle against such organisms during health, and when the blood serum is invaded by a specific antigen, the effort to overcome the less important mixed invasions seems to be exceedingly dangerous to the life of the patient. The flora of the genitalia, of the alimentary and of the respiratory tracts, has been found, under

normal physiological conditions, to comprise germs, which if found in certain other environs, or, under most favorable conditions, would be considered very dangerous to the health of the host. So long as these organisms are not in any way specifically responsible for the disease in the patient there should be no particular efforts wasted or forces exerted to combat them. Therefore, stimulation of the leukocytes for the formation of antibodies which shall combat any other germs than those specifically identified with the disease is contraindicated.

The practice of medicine is no longer speculative or shot-gun prescription work; therapeutics is becoming a distinct science. We are in a stage when specific diseases call for specific medication, and when the whys and wherefores for the use of certain therapeutic agents are demanded. It is through the fact that we find a specific bacterium to be the cause of a disease, that we endeavor to destroy that organism to which we directly attribute the infection. With such a dangerous form of medication as bacterial therapy thorough laboratory tests and experimentation are essential and these paramount issues have been somewhat neglected with the shot-gun mixtures of bacterial derivatives. For each disease for which a specific germ has been isolated, a bacterial derivative from the germ identified with that disease should be thoroughly tried out, in the laboratories and by clinical experimentation, before it is marketed to combat disease. These toxic products as such must be guardedly employed upon the diseased anatomy whenever they are used, and it is therefore advisable to employ them only directly against the invading organism to which a disease is directly attributable. Derivatives from shot-gun bacterial mixtures when employed to destroy secondary or mixed infections are useless, dangerous, and opposed to the direct combat against the specific germ of the disease. Mixed bacterial preparations have their positive value, but, as such, they should only be used as a combination of the products of the germs known positively to exist in association with the germ of the disease. No bacterial preparations should be introduced into the system for which there are no germ infections intimately related to or associated with the disease. A promiscuous jumble of bacterial derivatives not found to be directly associated with an infection is a worthless preparation and a menace when introduced into an already diseased system.

Bacterial therapy is in its youth, no longer should we say infancy, and with these playfull years there comes the desire for "rough-house." Mixed bacterial derivatives are undoubtedly rough-house makers among their companions and the mischief which they make is a handicap upon the advancement of bacterial medication. At best it must be admitted that although some remarkable findings are being reported, with certain specific bacterial derivatives, little as to the positive specificity of many of them has as yet been established.

Authorities still waver upon whether the suspension, the filtrate, the eliminated toxin, the serum or some other derivative is best for the annihilation of the disease from whose specific organism a product is derived. Other authorities question whether the autogenous or the stock product is best. Then again there arises the unsettled fact of dosage of the preparations. With such problems confronting the profession, surely no drug manufacturer should be permitted to throw out for indiscriminate use an indiscriminate, insufficiently tested, and, very often highly toxic preparation. Bacterial therapy has only gained in its prominence through the fact that in it is supposed to have been found the course for a directly stimulatory action upon the phagocytic behavior of the leukocytes in the blood stream against specific bacterial invasions.

It is the writer's belief that the mixed shot-gun bacterial derivatives really hinder, to a harmful degree, the production of the antigens which prepare the real causative germs of the disease for phagocytosis. Because a particular germ or other form of invasion is, in the majority of cases, the direct cause of a definite disease, because of the increased resistance against the efforts of tissues for the destruction of such an infection, because it requires every vital force of the anatomy to successfully combat a diseased condition and none should be misdirected to minor issues that are in no way causative, and finally because it is most essential to overcome the specific germ or invasion of any kind, which, as a rule, renders the body

further susceptible to secondary invasions, are proper and sufficient reasons why specific medication is demanded where a specific infection or invasion produces the disease. They are likewise reasons sufficient for the abandonment of the use of a jumble of bacterial preparations as the mixed bacterial derivatives, for the treatment of diseases for which there is no germ or combination of germs or for conditions which may not at all be attributable to a bacterium. In conclusion it is well to say that, essentially with the employment of bacterial therapy it should always be remembered that for each of its preparations there is required the isolation of the proper organism which is known to produce the disease, and some preparation from this organism is applicable for therapeutic purposes for the combat against that disease and no other.

Replying to an attack on the movement for local tuberculosis hospitals made by the Christian Science Church, Dr. Hermann M. Biggs, State Commissioner of Health of New York, says in a statement published through the *Journal of the Outdoor Life*, the official organ of The National Association for the Study and Prevention of Tuberculosis, that tuberculosis is an infectious disease and that every precaution known should be taken, especially for the protection of young children. He particularly urges local hospitals.

The occasion for Dr. Biggs' statement is the recent wide dissemination of an article purporting to show that tuberculosis is not infectious. By quoting only a part of a medical paper written by Dr. E. R. Baldwin, of Saranac Lake, the Christian Scientists have given the impression that tuberculosis is not infectious, when, as a matter of fact, Dr. Baldwin laid stress on the extreme danger of the disease to children.

"Tuberculosis is an infectious and communicable disease," says Dr. Biggs. "No age is exempt, and no one is immune against tuberculosis infection, but differences in susceptibility exist at different ages. The frequency of infection increases rapidly from the first year until at the age of fifteen perhaps 75 per cent. of the population show a positive reaction to tuberculin, although only a small proportion have signs of the disease which can be detected by other means.

"The conviction has been gradually strengthened that the first infections from tuberculosis often occur during infancy and childhood. It seems probable that many of those who develop the disease in adult life have carried the latent infection since childhood, and have no recent and new infection when the symptoms of the disease appear.

"It has also been found by experiment that it is difficult to re-infect an animal that has already been previously inoculated with tuberculosis. Hence, it is inferred that some degree of immunity may be thus produced that may serve to ward off bacilli which might find lodgment in an individual not previously infected. Therefore, it will be understood how the mild infections, which are healed and present in most persons who have reached adult age may, and presumably do, offer some protection against further limited invasions of the tubercle bacilli. While persons are in good health the protection thus offered is an advantage having some resemblance to vaccination, but only very limited in nature and not complete. Prolonged or intimate exposure, however, or exposure to a virulent type of tuberculosis may result in a new infection, even of those who have overcome a previous mild infection. It is, moreover, by no means certain that in debilitated conditions due to other diseases, to dissipation or to bad environment, new infections may not occur. We know positively that the first childhood infection may under such circumstances break out anew and thus become a doubtful advantage, a real sword with two edges.

"Considering the natural and acquired resistance to infection by adults, much unreasonable fear or 'phthisiophobia' has prevailed in late years. Because there is no precaution too great for the protection of the young and delicate, this does not justify healthy adults in exaggerated fears for their own safety. In view of the present wide distribution of the disease, and lack of adequate means for segregation, some exposure to infection is practically unavoidable. Efforts should be redoubled instead of relaxed for the better isolation, humane care and intelligent treatment of consumptives."

ANTAGONISM BETWEEN VAGUS AND SYMPATHETIC NERVES AND THEIR RELATION TO THERAPEUTICS.

By CHRISTIANA V. HAMMLER, St. Louis, Mo.

The influence of drugs upon the so-called animal nervous system; the sensory nerve endings; the centers, located in the brain, and upon the spinal cord; the efferent nerves which carry the stimuli to the striated voluntary muscles, has been investigated. To get a clear pharmacological analysis, we have followed a different order by beginning with the efferent part of the reflex arc, which are the motor nerves.

In contrast to the animal voluntary nervous system, the involuntary active organs are supplied by efferent nerves of the so-called vegetative system. They are the glands, intestines, blood-vessels, smooth muscles of the skin, the iris, etc. Physiologically these organs with smooth muscle fibres are similar to certain striated muscles as the heart, striated muscles of the oesophagus, and also the iris of birds, striated in contrast to the iris in the mammals. The innervation of all these body tissues is characteristic in that their functions more or less are independent of the central nervous system. A certain limited independency is assigned to this nervous system innervating these tissues from the central nervous system. Langley (*Journal of Physiology,* 1898) calls it an autonomous nervous system, but we still keep the name vegetative nervous system and call only that part of the vegetative nervous system which is not furnished by sympathetic nerves, the autonomous nervous system.

Now as to the origin, the fibres come from the central nervous system but their peculiarity is that they do not reach the periphery directly, but first communicate with ganglia cells in their tract. As to the sympathetic fibers from an anatomical physiological standpoint, they differ from the other vegetative fibers; this group is given off from the medial part of the spinal cord in the thoracic region and the fourth and fifth lumbar regions through the white rami communicantes to the superior and inferior cervical ganglion and also to the stellate ganglion. From this ganglion they join the spinal nerves as gray rami communicantes. These sympathetic nerves supply the vessels, glands, soft muscular organs of the whole body and thus form a coherent part of the vegetative nervous system.

In addition, almost all these organs receive another kind of vegetative nerves which have their origin partly in the middle and lower portion of the brain, and we call this second part of the spinal cord the cranial and sacral autonomous nerves. From the middle brain come the autonomous fibers, which find their way in the oculomotorius and reach the ciliary ganglion as short ciliary nerves to supply the sphincter iridis and ciliary muscle. In the medulla oblongata originate such autonomous nerves, which contain secretory fibers in the chorda tympani and for the salivary glands, and they also contain vaso-dilator fibers for the mouth. From the nervous facial, and glossopharyngeal originate secretory and vaso-dilator fibers together with the trigeminous supply the mucous tissues of the mouth, nose and pharynx. Lastly the medulla oblongata gives origin to autonomous fibers, which in the same tract of the vagus nerve run to the intestines, these are the inhibitory fibers of the heart and constrictor fibers for the bronchial muscles, motor fibers for the oesophagus, stomach, intestines, secretory fibers for stomach and pancreas, this is called the cranial autonomous system.

Langley's investigations showed that the cranial autonomous system and sacral autonomous system physiologically belong together. The pharmacologic reaction of the cranial-sacral autonomous nerve fibers are very plain in contrast to the sympathetic system, even if all the vegetative nerves have the same construction, apparently. Fibers from the central nervous system, which go to the ganglia, are called pre-ganglionare fibers and the nerve cells which come from the ganglion are called post-ganglionare fibers. In the whole course of the nerve there is only one interruption. That is the

change from the pre-ganglionare fiber to the post-ganglionare.

The action of nicotin on the vegetative system effects all ganglions of the vegetative systems, whether the fibers originate from the sympathetic or from the autonomous system. On the other hand both these groups of the vegetative system show a very antagonistic attitude physiologically and pharmacologically. Most organs have a double innervation on the one side from the sympathetic system—on the other the sacral system and in almost all the organs, which are doubly innervated, this twofold innervation is an antagonistic one; the stimulation of the sympathetic fibers causing the opposite effect to the stimulation of the autonomous, if, for instance, the splanchnicus inhibits the peristaltic movements the autonomous fibers of the vagus will stimulate the upper part of the intestines and the sacral fibers of the pelvic nerves, the lower intestines, while the sympatheticus supplies the dilator iridis, the autonomous branch of the oculo-motor supplies the antagonistic sphincter iridis, the accelerators from the sympathetic are opposed to the heart inhibitory fibers of the vagus. A number of organs and besides that the vessels and glands of the skin, trunk and extremities so far as we know are only innervated by the sympathetic system.

Adrenalin affects the organs the same way as a stimulation of the sympathetic fibers pertaining to them. Adrenalin causes vaso-constriction of the sympathetic fibers in all vascular regions—strengthening and increasing the frequency of the heart beat and a stimulation of the accelerators with dilation of the pupils, stimulation of the cervical sympathetic nerves, secretion of the salivary glands as far as they can be affected by the nerve fibers. Where sympathetic fibers have inhibitory effects as for instance on the stomach, intestines and bladder, adrenalin in the same manner does not cause stimulation but an inhibition. Adrenalin always acts in the same manner as stimulation of the sympathetic would act.

Ergotoxin paralyses the endings of the sympathetic fibers and does not affect the inhibitory fibers. Ergotoxin in large doses does not cause vaso-constriction—inhibitory effect of the splanchnic on the intestines or of the sympathetic nerves still remain when they inhibit the bladder.

The result of muscarin is contraction of the pupils, of atropin dilation of the pupils. Muscarin acts on the heart by irritation of the vagus. Atropin has the opposite effect. Muscarin contracts the bronchial muscles and atropin relaxes them. Muscarin and pilocarpin causing sharp contraction of the muscles of the stomach, intestines and smooth muscles of other organs: Atropin in certain doses relieves the muscle contraction, muscarin and pilocarpin causes secretion of all glands; atropin lessens secretion. These poisons weaken the glands in the skin and all end apparatus of the autonomous nerves.

Picrotoxin causes an excitement of all cranial and sacral autonomous nerves (oculomotoris, chorda, vagus, pelvicus) nicotin weakens all ganglia of the whole vegetative system, adrenalin only the sympathetic end-fibers. The atropin and muscarin group weaken the ends of the autonomous nerves, the heart beats frequently from the irritation of the accelerators after large doses of caffeine, as in paralysis of the vagus from atropin.

Neurasthenia, hysteria and nervousness are functional diseases of the autonomous system. Our knowledge of the physiologic unit of the autonomous nervous system proves, that if there is an irritation in it, we must look for other symptoms in the same system.

The vagotonous disposition occurs during youth and middle age. Men and women come with apparently insignificant complaints, mostly intestinal and stomach complaints or for fear of a heart defect. The appearance of these individuals is that of a nervous patient; their movements are hasty and thoughtless. The color of the face is often changeable from a sudden red to paleness. Hands are cyanotic and on pressure by the finger they quickly grow pale, moist and cool; the hands appear rough even though the patient does no hard work. Patient perspires often and easily over the whole body. From fear and excitement the face is moist; large bulging eyes suggest Basedow's disease. Usually the individual shows malnutrition resulting from a rachitic condition during childhood or operation of polyps, adenoids or enlarged tonsils;

among other symptoms the tendon reflexes are increased. Sometimes Chvosteck symptom (increase of the mechanic irritability of the motor nerves, especially the facial, in tetany. Weiss reflex (contraction of facial muscles upon light percussion, is noticed in tetany, neurasthenia, hysteria and exophthalmic goiter) the cremasteric reflex, the abdominal muscle reflexes are exaggerated. Trembling of the eyelids and tongue; tremor of the fingers are seldom absent. Installation of atropin in the eye will cause strong mydriasis and great accommodation disturbance. Pilocarpin causes disagreeable sensation and spasm of accommodation. Pilocarpin 0.01 gm. as subcutaneous injection, causes profuse perspiration and salivation, while a subcutaneous injection of 1 c.cm. adrenalin causes hardly any subjective disturbance and in typical vagotonics will not produce glycosuria or polyuria.

Bronchial asthma will be relieved by an atropin treatment or by injection of adrenalin. In laryngeal spasm in children atropin acts promptly. In motor insufficiently of the stomach atropin has an alleviating effect. In chronic nervous diarrhea adrenalinenema (20-30 gtt. to 150-300 liquid) has a favorable effect. Adrenalin given in large doses is only slowly absorbed and never causes disagreeable consequences, not even tachycardia. In the intestines adrenalin will decrease peristalsis.

Vagotony is the functional increased tonus in the autonomous nervous system, it can almost affect the whole system or likewise only single branches of the same. It stands to reason that even in the worst cases of general carcinosis, the adrenalin glycosuria always sets in, while we never succeed in securing strong effects by pylocarpin. There are cases of tabes where the visceral disturbances appear in the very beginning, stronger than in other cases. It may happen, that crises which are autonomous stimulations are entirely absent. Pupillar contraction in the beginning of the crisis, frequently hypersecretion, which sometimes is accompanied by hyperacidity, increased peristalsis and perspiration. This appears sometimes in the climax of the crisis, and may partly be attributed to symptoms of tabes. Lachrymation, the larynx and rectal crisis suggest at the climax that stimulation originates in the cutaneous system; the fact that in the later course of tabes such spasmodic disturbances may be reversed, as for instance (recurrent paralysis, increased atony of the stomach and from that an acidity; perhaps also incontinency of the rectum and bladder, impotency, etc.) suggest the possibility of the original state of prolonged irritation in the vagus system, having become a paralytic state.

A corroboration might be in the histological fact, that in many of these cases a pronounced degeneration of the vagus trunk on one side, as also in its nucleus, were found. For this suggestion there is a reason —that the tabes poison, which seems to have a specific affinity for the posterior root has an inclination towards the autonomous nervous system by throwing it first into a state of irritation, later, in a state of paralysis. Disturbances of the character of the sympathetic irritation may be concomitant with symptoms, which absolutely have to be attributed to autonomous irritation.

In typical cases of Basedow disease, to establish the antagonism between pilocarpin and adrenalin inasmuch as the sympathetic cases were less susceptible and vice versa, the vagotonic cases did not result in glycosuria on adrenalin administration. With the great irritation of the vagus there is scarcely possible a great and prolonged irritation of the sympathicus. In many cases of initial tuberculosis, many vagotonic signs are well pronounced, for instance, inclination to night sweats, diarrhea, lessened blood-pressure, gastro-intestinal disturbances. In testing the different individuals with adrenalin or pilocarpin it appeared that scarcely one case of tuberculosis was susceptible to adrenalin while with pilocarpin the noted symptoms always were elicited.

Vagotony is a stage of durable tonic irritation in the range of the prolonged vagus in which the pertaining organs are kept in a condition already similar to that of autonomous irritation, although a specific for vagus.

Physostigmin cannot be neutralized entirely by curare, the general paralyzing effects of curare may be suspended by physostigmin. The absence of irritability of the vagus after high doses of curare may be counteracted at once by physostigmin, while

on the other hand curare lacks paralyzing influence on the nervous apparatus of the secretory glands, which are strongly activated by physostigmin. Atropin is a spasm relaxing drug. Addition of atropin to digitalis is often required whenever disturbances of the stomach or high bradycardia render the administration of digitalis infusion difficult.

Eumydrin proves beneficial in counteracting the night sweats of tuberculous people. If atropin is not successful the cause is usually due to too small doses. The fact, that adrenalin is an excellent means against many spasmodic conditions of the autonomous system, bronchial asthma, gall-colic and diarrhea, has been proven and that really vagus paralysis and sympathetic irritation have a mutual relation not only to their symptoms but to their etiology.

VAGINAL HYSTEROTOMY.—A. E. Hertzler, Kansas City, Mo. (*Journal A. M. A.*), recalls the fact that some years ago he described a method of abdominal hysterotomy in which a nearly bloodless field was secured by temporary compression of the ovarian and uterine arteries by clamps. At that time he had already employed incisions which are here described when vaginal operations were in progress but he has found that he was not using a new principle as he then thought. His present technic is thus described: "The cervix is grasped on each side with tenaculum forceps and drawn down toward the vulva. A transverse incision is made in the anterior culdesac. The bladder is then freely raised from the uterus. The cervix is now split up to or slightly beyond the internal os, and the fundus is brought out into the vulva. It is well at this point to take a preliminary survey in order to determine the probable further requirements of the case. Often a lesion in the direct line of the incision is seen and the incision may then be extended to meet the conditions present. For instance, in case there is a submucous fibroid or a polyp the base of the tumor is circumscribed by the incision. When the lesion is diffuse, as in polypoid endometritis, a curet may be employed; but ordinarily when a lesion has been persistent enough to demand hysterotomy, complete excision of the affected area is better than curettage. This is particularly true if the patient is at or near the menopause. When the lesion has been excised, the remaining portion of the uterus is united by sutures. If possible, the knots should be placed inside the uterine cavity so that there may be as smooth a surface as possible when the fundus is replaced in the abdominal cavity. When the suture line has been placed as far as the internal os the fundus is returned to the abdominal cavity. The suture is then completed so as to unite the vaginal portion of the cervix and restore the incision in the culdesac. If so much of the fundus is removed that subsequent pregnancy would be unsafe, a portion of the tubes must be excised. If the portion of the fundus removed includes the insertion of the tubes, the free end of the broad ligament must be united to the remaining portion of the uterus in such a way that the tubes do not reach the cavity of the uterus, lest pregnancy take place. The extent of the uterus to be excised is determined by the extent of the lesion present. In idiopathic hemorrhage or diffuse polypoid endometritis at the menopause it may be desirable to excise the entire body of the uterus down to the internal os. In this way a supravaginal amputation by vagina is done." After excision of the diseased part if the broad ligament is involved its free ends are brought together and attached to the stump remaining. The special usefulness of the operation as described is claimed to be for tumor within the uterus. It permits excision at the point of attachment and removal of the tumor without pulling it across the abdominal cavity. Where malignancy is suspected it should replace the curet. The diagnosis can be made under the eye and dissemination of neglected malignant growths be prevented. It is a perfectly safe operation and with careful coaptation leaves a firm uterine wall. Two of his patients thus operated on have passed through normal pregnancies. In case cystocele, descensus or retroflexion coexist in a patient past the menopause or when sterilization is otherwise indicated, the Freund-Wertheim operation may be added with advantage. The article is illustrated.

DIRECT INGUINAL HERNIA IN A BOY ELEVEN YEARS OF AGE.

By RALPH H. HERTZLER, M. D., Surgeon to Bethel Deaconess Hospital, Newton, Kans.

It is the rarity of direct inguinal hernia in children, and a few difficulties presented in the diagnosis of this case, that prompts me to make this report. Direct inguinal hernia is very rare in children, and is found usually in adult life and adult males. It is said to be always acquired. Strictly speaking, it is a ventral hernia rather than an inguinal one, because it does not pass through the inguinal canal, but emerges directly through the conjoined tendon, about at the level of the external ring, forward and to the inner side of the deep epigastric artery.

Case A. S., male, aged eleven, admitted to Bethel Deaconess Hospital, with the family diagnosis of acute appendicitis. Found that on four previous occasions extending over a period of three years the boy had been forced to bed because of a severe, acute pain in his right groin. This would remain only about a day, to be followed by a long period of perfect health and comfort. Patient never vomited, and only once had he felt nauseous. Sometimes he had a slight temperature.

On examination I discovered a round, spherical, swelling in the right inguinal region, lying about at the middle of Poupart's ligament and a little below it. It was about the size of half an egg, not reducible, not very sensitive to touch. The mass was perfectly smooth, not lobulated. Several possibilities presented themselves: first, a direct inguinal hernia; second, a hydrocele of the cord; and third, a lipoma. The acute onset of the symptoms, the sudden pain, the relief immediately following rest in the prone position, the slight temperature, the repeated attacks of what appeared to be a slight strangulation, all favored the diagnosis of hernia. The position of the tumor, about the middle of Poupart's ligament, the fact that it was not reducible, the rarity of direct inguinal hernia in children, its size and shape, the fact that there was no appreciable impulse on coughing, seemed to favor the diagnosis of hydrocele of the cord. The frequent occurrence of lipoma in this location brought this to mind as a possibility.

The patient came to operation on March 21, 1914. I made the usual incision for inguinal hernia, and found a direct inguinal hernia, the sack emerging directly from the external ring, and spread out toward the median line. On dissecting the sack away from the tissues over Poupart's ligament and opening it I found the sack full of serous fluid, and almost entirely constricted at the base. By means of a probe I was able to find a small opening in the base of the sack which led directly into the free abdominal cavity. The sack was not intimately related to the structures of the spermatic cord, as it is in oblique inguinal hernia, in fact the cord was not even seen during the operation, so it was not disturbed. The cord usually lies to the outer side or behind the hernia, and quite separate from it. Ligation and removal of the sack, and a modified Bassini for the abdominal wall completed the operation.

It is a long time since James Lane Allen has appeared before the world as a writer of fiction. He has written a long story which *The Century Magazine* prints complete in the May number. It is said that this story by the author of the idyllic "Kentucky Cardinal," is an idyl of New York City. The scene is laid in and near the new Cathedral of St. John the Divine on Morningside Heights; and the Art School of the National Academy and St. Luke's Hospital are both included in the setting.

THE ESSENTIALS OF URINARY ANALYSIS IN DIABETES MELLITUS; WITH SOME OBSERVATIONS ON THE SIGNIFICANCE OF THE DATA THUS OBTAINED.

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It is a truism to say that as a means of diagnosis of the type of glycosuria or diabetes, in forming a prognosis and as a guide to the therapeutic measures to be employed, a careful study of the urine is essential. Yet when we come to enquire as to what constitutes a careful study of the urine in these cases the definition is not so clear. The day when it was sufficient for a physician to boil a little urine with a copper solution and on obtaining a reduction to tell the patient that he had diabetes, giving him instructions to change his usual bread to gluten and to hand him out a prescription for codeine, is past. Today we would like to have for our guidance, daily nitrogen partitions, a complete balance of the excreted bases and acids, quantitative determinations of β-oxybutyric acid, etc. So much elaborate chemical work has been done in the study of these problems that one is at times bewildered by the bearing of new lines of investigation and is discouraged by the seemingly complexity of the chemical procedures and the multiplicity of tests from which one must select those which furnish information of distinct clinical value and which are within the reach of the facilities of the general practitioner and the purse of the patient.

It would seem worth while, therefore, to briefly consider what constitutes a urinary analysis adequate for the physician who desires to treat his patient intelligently and yet is not so complex as to be beyond average attainment. I therefore propose to offer a few practical suggestions as to the selection of methods, their execution and the value of the data thus obtained, based on a considerable experience won from the laboratory and the clinic.

TWENTY-FOUR-HOUR SPECIMENS.

First of all, a urinary examination in these cases is of little value unless the 24-hour-specimen is obtained. Mere percentages (of glucose, for example) are of very little value in estimating the patient's condition; we may have found that a given specimen of urine contains 4 per cent. of glucose, it makes a very great difference in estimating the patient's condition as to whether he is passing 1,000 c.cm. or 4,000 c.cm. in the 24 hours; in the first instance his glucose output will be 40 grams, in the second 160 grams. In order to obtain a 24-hour quantity it is necessary to explain to the patient why we want it, otherwise he will almost certainly say that a few ounces were thrown away and he thought this made no difference, probably the bottle which he had at hand was not quite large enough to hold the whole quantity and unless the explanation has been given he will not think this a matter of importance and an indefinite amount is not saved. Furthermore it is necessary to give explicit directions as to when to begin and when to terminate the collection of a 24-hour specimen. I make it a rule to give each patient written instructions as follows: "Pass your urine at 8 a. m. (Wednesday) and throw this away, thus starting with an empty bladder, subsequent to this save *all* the urine passed until 8 a. m. the next morning (Thursday), saving the urine which is passed at 8 a. m. (Thursday) and including it in the specimen *all* of which must be sent *promptly* to the laboratory (within 2 hours) to avoid decomposition which may render the specimen unfit for analysis." In warm weather it is always safe to use a preservative (a teaspoonful of boracic acid powder to a quart of urine is very satisfactory for this purpose).

TABULATED RECORDS.

To follow the progress of a diabetic intelligently his record should be kept in tabulated form; this is a labor saving device and allows us to tell at a glance the urinary changes from day to day.

The following data should be recorded for each specimen:

1. Date.
2. Quantity (24 hours).
3. Specific gravity.
4. Reaction to litmus.
5. Albumin.
6. Sugar (output in 24 hours).
7. Acidosis index (24 hours).
8. Urea (output in 24 hours).
9. Microscopic examination.
10. Diet during the collection of the specimen, including alcohol, kind and amount of each article of the food taken at this time.
11. Carbohydrate balance.
12. Weight of patient.
13. Medication.

Albumin.

This is best detected by boiling and adding a few drops of 10 per cent. acetic acid or by the cold nitric acid ring test, but before applying these tests every specimen of urine should be filtered. If albumin is present it must be removed by boiling, acidulating with acetic acid and filtering before sugar and urea determinations are made. The knowledge of the presence or absence of albumin is not only important so that our subsequent determinations of urea and sugar may be made more accurate by its removal, but also because it may indicate the condition of the kidney parenchyma during the stress of the excretion of the abnormal products of metabolism, sugar, organic acids, ammonia, etc.

Sugar.

There are a number of simple qualitative tests for sugar that are suitable for clinical purposes. Perhaps the most important single element in selecting one of these is that one must be *familiar* with the test. I do not believe that one can be on terms of intimacy with the simplest of these tests until he has repeated it several hundred times, only then will he grasp the meaning of the finer variations. As a preliminary qualitative test I think there is nothing better than Fehling's. The two solutions, "copper" and "alkaline" must be kept in separate bottles and mixed only when needed for immediate use. The error which may be introduced by using a ready mixed stock solution is illustrated by a recent experience. I was called to see a case of diabetes by a physician located in a small country town. In describing the case to me he mentioned that he had seen an unusual number of cases of glycosuria recently (14 cases in the preceding six weeks) all of which had been hitherto unsuspected. On questioning I found that he was using a ready mixed Fehling's solution which he had kept for some months. On boiling a little of this without the addition of any other fluid a reduction occurred. I sent him a fresh supply of the two solutions of Fehling and a report from him a few weeks later stated that only two of the urine from the fourteen which had previously been examined showed a reduction.

The Fehling's test should be applied in the following manner: In a test tube put 1 c.cm. each of the "copper" and "alkaline" solutions and to this add 2 c.cm. of distilled water, boil thoroughly and note that no change of the blue color of the unboiled mixture has occurred; add 1 c.cm. of the urine to be tested, again boil thoroughly and allow the test tube to stand for 5 minutes. *If under these conditions no change in color has taken place the urine does not contain glucose* in an amount which may be regarded as pathological. *A moderate reduction occurring under these conditions* proves the presence of a reducing body, *but this does not necessarily mean that sugar is present.* Any urine reducing Fehling's solution should be tested by fermentation. For this purpose I have found the Einhorn saccharometer tubes to be most useful. Shake 10 c.cm. of urine with a piece of compressed yeast the size of a small pea, pour this into the Einhorn tube so that the long limb is full, making sure that no bubbles are present and place the tube in a warm place (100° F.); with this should always be placed a control tube prepared in the same manner with a urine which does not reduce Fehling's solution. *At the end of 24 hours a bubble of gas larger than that in the control tube indicates the presence of a fermentable sugar.* This may be dextrose, levulose or maltose. Maltosuria is exceedingly rare, as is also pure levulosuria. A mixture of dextrose and levulose in the urine is much less uncommon. These sugars may be further identified by hydrolysis and the use of the polariscope, and by the use of Seliwan-

off's and Barfoed's tests, but these are reactions which can be employed to advantage only by one possessing considerable chemical experience, and he will not often make an error* who assumes that a urine which both reduces Fehling's solution and which is fermentable contains glucose.

The most satisfactory method for determining sugar quantitatively is that of Benedict,** which is easy, rapid and accurate and requires a minimum amount of apparatus. The method is best obtained by consulting Benedict's original paper.

For those who are doing any considerable amount of work on diabetic urines a polariscope is almost indispensable; in ordinary routine work I use it in preference to the other quantitative methods. In using the polariscope it will be found necessary to clear the urine in most cases. I have found that this is most satisfactorily accomplished by adding to the urine in a small beaker 5 drops of glacial acetic acid, a little animal charcoal and about a gram of solid lead acetate; the mixture is thoroughly stirred and filtered through two layers of fine filter paper (Schleicher No. 597) this procedure practically always clears the urine sufficiently for polariscopic examination. Careful studies in my laboratory have shown that the rotary power of the urine is not affected by these agents.

The polarizing power of the urine should be determined as passed and again after fermentation. (It is always well to apply the Fehling's test to the urine which has been fermented to make sure that all sugar has been broken down by the yeast.

The substances commonly found in diabetic urines which cause a deflection of polarized light are:

Glucose=positive rotation.

Levulose=negative rotation.

β-oxybutyric acid=negative rotation.

The rotation before fermentation is equal to the algebraic sum of these three substances. The rotation after fermentation, which removes glucose and levulose, is due to and therefore a measure of the β-oxybutyric acid present.

The determination of sugars by the reduction method of Benedict gives the total sugar per cent. present, *i. e.*, glucose plus levulose.

In order to determine the relative amounts of these various factors we use the following formulæ when in percentages:

a=rotation before fermentation.
b=rotation after fermentation.
c=reduction by Benedict's method.
G=glucose.
L=levulose.
B=β-oxybutyric acid.

$$a = G - (L + B.)$$
$$b = \quad\quad -B$$

Subtracting $a - b = G - L$

$$c = G + L$$
$$a - b = G - L$$

$$c = G + L$$
$$a - b = G - L$$

Adding $a - b + c = 2G$

$$\frac{a - b + c}{2} = G$$

Subtracting $c - a + b = 2L$

$$\frac{c - a + b}{2} = L$$

The principal value of determining the relative amounts of glucose, levulose and β-oxybutyric acid by the polariscopic method combined with Benedict's is to obtain a correct estimate of the glucose output. The presence of a small amount of levulose in cases excreting considerable quantities of sugar is quite common and of no special significance, the direct polariscopic estimation of oxybutyric acid in urine is not a reliable* method, a much more satisfactory method for determining the degree of acidosis being the estimation of the "acidosis index" (see below). The degree of rotation after fermentation is mainly of value in correcting our estimate of the glucose output.

*For a discussion of possible errors see "The Relationship of the Life Insurance Company to the Applicant Showing Glycosuria," *Medical Record*, N. Y., 1907. September 28.

***Archives of Internal Medicine*, 1911, Vol. VII, March, p. 367.

**Journal of the American Medical Association*, 1911, Vol. LVII, Oct. 11, p. 1193.

Acetone Bodies.

The presence of the acetone bodies (acetone diacetic and β-oxybutyric acids) should be sought at frequent intervals. Acetone may be detected by Lange's test (see below), diacetic acid by the ferric chloride test (see below); the qualitative tests for β-oxybutyric acid are more difficult.* When any considerable amount of diacetic acid is present as denoted by the strength of the ferric chloride reaction the quantitative output of the acetone bodies should be estimated. An accurate quantitative estimation of these substances is so laborious and expensive as to place it beyond the reach of the average clinician, but the estimation of the "acidosis index" as detailed below is a simple matter and affords information of great practical value.

The Acidosis Index.

1. Test the suspected urine for acetone by means of Lange's test in the following manner. In a test-tube containing 5 c.cm. of urine dissolve a few crystals of sodium nitro-prussiate, add 1 c.cm. of glacial acetic acid; overlay this mixture with 3 c.cm. of strong ammonium hydroxid. If acetone is present a purple ring will develop at the point of contact between the ammonium and the underlying mixture.

2. If the above test shows the presence of acetone, make a further quantitative test for diacetic acid. For this purpose the following solutions are necessary:

(a) The "standard solution," consisting of ethyl-aceto-acetate 1 c.cm.; alcohol 25 c.cm.; and distilled water to 1,000 c.cm.

(b) Ferric chlorid solution, consisting of 100 grams ferric chlorid dissolved in 100 c.cm. of distilled water.

Take two test-tubes of equal calibre (½-inch in diameter); put in one 10 c.cm. of the "standard solution" and in the other 10 c.cm. of the urine to be tested; add to each 1 c.cm. of the ferric chlorid solution; allow the tubes to stand a couple of minutes to permit the color to develop fully, and then compare the colors of the two test-tubes when they are held between the sky and the eye. If the tube containing the "standard solution" is of a lighter shade than the urine mixture, dilute this with distilled water until the colors match, noting the volume to which it has been necessary to dilute the urine mixture.

By this method we obtain a numerical value for the "acidosis index per liter" in accordance with the following schedule:

	Acidosis index per liter
Test 1 positive, test 2 negative..	0.5
Test 2 positive.	
Volume of Urine Sol.	
10 c.cm.....	1.0
15 c.cm.....	1.5
20 c.cm.....	2.0
50 c.cm.....	5.0
100 c.cm.....	10.0

(Intermedial volumes have a proportional index.)

In order to obtain the "acidosis index" proper, we multiply the value of the "acidosis index per liter" by the amount of urine in liters passed in twenty-four hours. For example: A patient passed 3,200 c.cm. of urine in twenty-four hours; when 10 c.cm. of this was treated as described above, it was found necessary to dilute this to 75 c.cm. in order to match the standard; his "acidosis index" per liter was therefore 7.5 and his "acidosis index" was 7.5×3.2=24.

The "acidosis index" approximately corresponds in value to the total acidosis estimated in terms of β-oxybutyric acid by the more exact chemical methods, *e. g.*, an acidosis index" of 10 corresponds approximately to a total acidosis of 10 grams of β-oxybutyric acid, an "acidosis index" of 25 equals approximately 25 grams of β-oxybutyric acid, etc.* In utilizing this method it should be borne in mind that it is not an exact measure, but is sufficiently accurate to gauge the variations of the acetone-body output for clinical purposes.

Ammonia as a Measure of Acidosis.

Another means of following the degree of acid intoxication is the quantitative estima-

*"The Acidosis Index," *Archives of Internal Medicine*, 1911, Vol. VII, March, p. 367.

The American Journal of the Medical Sciences, 1909, June.

tion of ammonia. Folin's* is a simple and satisfactory method for this purpose, and affords a valuable means of estimating the organic acid output (since ammonia is manufactured by the organisms in sufficient quantities to neutralize its organic acids) until alkalies are administered; at this time the organic acids are excreted in combination with the alkali and a less definite amount of ammonia is manufactured. Under these conditions the "acidosis index" is a better indication of the organic acid output than is the estimation of ammonia.

Significance of the Excretion of Organic Acids.

There is much misconception in regard to the significance of the excretion of the acetone bodies by the diabetic. When one discovers a moderate amount of acetone or diacetic acid in the urine it does not indicate that the patient necessarily has a very severe form of diabetes or that acid intoxication is imminent. It is an indication that the individual is not metabolizing a sufficient quantity of carbohydrates to properly assist in the oxidation of the facts, to which process the utilization of carbohydrates appears to be so essential. This may mean only that a reduction of the carbohydrate intake has produced the same result that a similar reduction of food would in the normal individual. An excretion of acetone bodies of this degree is merely a signal that we must watch their progress and we may be able to note the disappearance of all traces of these bodies as soon as the carbohydrate tolerance improves.** On the other hand, the progressive increase in the "acidosis index" evidences the advance of a more severe diabetic disorder. With the administration of alkalies the organic acid output may be increased, and this is probably due to the greater facility with which the retained acids are excreted when thus furnished with alkalis with which they may combine, but having shown this temporarily enlarged output the index may later indicate a diminished formation of these substances. When the "acidosis index" marks a continuous output of acetone bodies amounting to 3 grams or over in the 24 hours the outlook is decidedly serious. I have never, however, in a considerable experience, seen a case of diabetes in which coma threatened, in which the organic acid excretion when carefully observed had not exceeded an equivalent of 15 grams of β-oxybutric acid in 24 hours.

Zeitschr. f. physiol. Chem., 1902, XXXVII, p. 161.

**See "Results in the Treatment of Diabetes Mellitus," *Medical Record*, N. Y., 1910, October 8.

Urea.

The hypobromate method while not strictly accurate in the presence of sugar, gives information of distinct value as an approximate measure of proteid metabolism and hence as a guide in regulating the diet in advanced cases of diabetes where it is essential to restrict the proteid intake to moderate amounts. The urea output is roughly double the amount of the total nitrogen output, hence in the absence of the opportunity to make nitrogen determinations the urea output divided by two will give us an approximate idea of the nitrogenous metabolism.

In severe diabetics it is well to see that the urea output does not exceed 25 grams in the 24 hours and often it is of advantage to lower even this amount by a further reduction of the protein intake.

Weighing the Diet.

The patient should be induced if possible to weigh his diet following the food prescription both in respect to quality and quantity as directed in writing by the physician. By utilizing the food-scale* which I devised for this purpose some years ago, I find that it is not difficult to arouse the interest of the patient in this important feature and to obtain his coöperation. After a training of a few weeks it will be unnecessary to weigh each article of diet, but it is well to return to the use of the scales from time to time to check up the weights of the various forms of food.

On any given day of observation, when the 24-hour urine is being collected for an-

Journal of the American Medical Association, 1909, Vol. LIII, August 7, p. 457.

alysis, the patient should keep a written record, both qualitative and quantitative, of all food taken including the amount of alcohol if this is allowed.

The carbohydrate balance is obtained by computing the difference between the carbohydrate intake and output for any given 24 hours. When the intake is greater than the output we speak of a positive balance, when on the contrary the output is greater than the intake we speak of the patient as having a negative carbohydrate balance.

An example of the calculation of the carbohydrate balance of a patient who showed a negative balance when he first came under observation and later a positive balance follows*:

Intake
50 grams wheat bread=27 grams glucose
Output
=35 grams glucose

Carbohydrate balance=—8 grams glucose
Intake
100 grams wheat bread=55 grams glucose
Output
=20 grams glucose

Carbohydrate balance=+35 grams glucose

I believe that the urinary data which have been discussed above are sufficient to allow one to follow the course of a diabetic intelligently and furnish us with facts which may form the basis of an efficient management, while their acquisition is within the reach of any physician having a reasonable amount of chemical training and a modest laboratory outfit.

130 West 59th Street.

*For other examples see *Medical Record*, N. Y., 1910, October 8.

WARNING TO USERS OF TURPENTINE FOR MEDICINAL OR VETERINARY PURPOSES.—As the result of an investigation by the U. S. Department of Agriculture, it has been found that the adulteration of turpentine with mineral oils is so widespread that druggists and manufacturers of pharmaceutical products and grocers' sundries used for medicinal and veterinary purposes should exercise special caution in purchasing turpentine. Those who use turpentine for this purpose, unless they are careful, run the risk of obtaining an adulterated article and unnecessarily laying themselves open to prosecution under the Food and Drugs Act.

It has been found, moreover, that the turpentine sold to the country stores especially, as usually put out by dealers and manufacturers of grocers' sundries, is often short in volume by as much as 5 or 10 per cent. Dealers, therefore, should also protect themselves through a guarantee from the wholesaler that the bottle contains the full declared volume.

The department has found that turpentine may be adulterated in the South where it is made and that the further it gets from the South the more extensively and heavily it is adulterated.

In all cases, druggists, manufacturers and wholesale grocers should satisfy themselves that the turpentine is free from adulteration and is true to marked volume.

FOOD-POISONING.—Percy G. Stiles, Boston (*Journal A. M. A.*), gives his personal experience, with detail of the symptoms, of food-poisoning. The case is unusual in the early appearance of the symptoms which began to appear in three hours or less after the ingestion of the food. They began with faintness and general weakness and prostration, with attacks of nausea and vomiting. These were followed by vertigo and nystagmus together with cardiac irregularities, disturbances of vision, constipation, and lessened urinary secretion. The convalescence was gradual, taking over three months. The mental condition was clear throughout, though the power of application was limited. The food to which the attack was attributed was minced chicken. No other cases from the same food occurred.

RETROSPECT.

By D. L. FIELD, M. D., Jeffersonville, Ind.

Great advances have been made in the art of healing within the lifetime of many who are practicing today. Our knowledge of medicines and their application to diseased conditions are more voluminous and accurate than they used to be. Medical schools have greatly multiplied, and flourished.

When the writer was a matriculant, medical schools boasted of from six to eight chairs; now from a dozen to two or three dozen.

Philadelphia was the mecca. The textbooks were Dewees' Midwifery, Dunglison's and Carpenter's Physiologies; Gray's Anatomy, or Wistar's; Herz's or Silliman's Chemistry; most anybody's Practice. Study under a preceptor for awhile, when you read United States Dispensatory and Somebody's Anatomy and you were equipped for Medical College, where no questions were asked as to what preparation you had made, outside of finances, to fit you to comprehend a course of medical lectures! Two years made a mediocre student a full-fledged physician, to prey upon an ignorant and innocent public!

I was one of them! However, I had an advantage that many did not have, in that I had a good scholastic education, and had been for two years a student of Latin and Greek. Whereas then one would graduate (?) in a two years' course, now such a course is only an introduction to medical education.

The number of students who got through by the skin of their teeth were not so few, but it was the rarest thing for anyone to fail to pass the final examination. Educational qualifications were not in it!

As to Practice when I read Medicine, there has been marvelous change and improvement. Fifty years ago, medicines were used lavishly; now sparingly. Few of the old favorite remedies have survived medical iconoclasm. Such agents as bromides, opium, iodine, cinchona, alkaloids, ipecac, castor oil, belladonna, aconite, veratrum, etc., survive.

Disease is no longer regarded as an entity, and so treated; but it is a manifestation of conditions—a natural phenomenon resulting from natural processes, however painful or destructive. Medicine has undergone such a change that, to the student of today, it would be incomprehensible and inconceivable.

Some people look backward for wisdom, and regard things present with suspicion as being innovations, and no more perfect than the theories and practices of earlier days. They are back-numbers, who venerate old ideas, and imagine that discovery and progress are no improvement, so far as successful results are concerned. I have been in the harness long enough to know that, judging the past by the present, it is like comparing the misty dawn to effulgent noonday. Forward motion opens to our perceptions new views, from higher points of observation, around which the horizon of our vision is conspicuously widened. We have advanced from a narrow field to a broad expanse of enlightened observation and brilliant future prospects.

When the writer began the practice of medicine, we had no fever thermometers, no elegant compounds, no capsules, no sugar or gelatin coated pills; no serum, no bovine virus, but used crusts from arm to arm; no triturates, nor compressed tablets; no atomizers or fountain syringes; no hypodermic syringe; knew nothing of sepsis, and antisepsis; and the medicinal agents used were crude and nauseous; no quinine, but the sulphate, we had no combinations as we have today. We used Cook's and Compound Cathartic pills: vilest smelling and tasting decoctions. Every family though it necessary to have a box of pills in the house, and you would find either Jaynes', Wright's, McLane's, Ayers', or Morse's pills on the mantel.

Now patent preparations are about a thing of the past. Proprietories have supplanted them and, by the way, proprietory preparations are multiplying so fast that a physician can hardly keep up with them. As Dr. McClure said in the "Bonnie Briar Bush," he "Couldna nae keap up wi the new Medicine." He said he "Had leetle time to read, and nae time to travel."

The advantages we now enjoy we owe to scientific pharmacy.

THE ORGANS OF INTERNAL SECRETION IN RELATION TO MALE ORGANS OF GENERATION.

By FRANK P. STARKEY, M. D., Philadelphia, Pa.

It is now generally accepted that by the organs of internal secretion we mean the pituitary body, the pineal gland, the thyroid gland, the suprarenal bodies, the ovaries and the testes. Other organs have been credited with internal secretions, and no doubt with more or less truth, especially the thymus gland, which, without question, has an internal secretion of its own, but as it is usually a very transitory organ, we will not allude to it in this paper.

The pineal, the pituitary, and the adrenals seem to be most prominently involved in the early evolution of the male sexual organs. In cases of hyperactivity of the pineal in early childhood, precocious puberty is established, some cases having been reported of a complete sexual development that occurred as early as the sixth year when associated with this particular phenomenon. On the other hand, hypopinealism or deficient activity of the pineal gland is frequently accompanied by strong erections in very young children. Hyperactivity of the pituitary gland also has a marked effect upon the growth of the male genitalia, and hypoactivity of the same organ is responsible for genital as well as somatic infantilism.

As our studies of the ductless and sexual glands and their internal secretions or ergonisons proceed, we are impressed by two facts: first, that no one gland controls the sexual development or activity at any given period of the development, or life, of the human organism, and, second, that diametrically opposite conditions may prevail, apparently due to the same departure from the normal of any given gland, and we are impressed by the necessity of the harmonious action and interaction of all of these organs to maintain the equilibrium necessary to health. The giant and the dwarf, for instance, both suffer from sexual underdevelopment, showing that both hyper-function and hypo-function of the pituitary may produce the same result.

Hyper-pituitarism or hyper-pinealism both produce early ossification of the hypophyseal cartilage with consequent shortness of the long bones. The individuals with precocious sexual development are usually short of stature with a square body (blocky) and short legs. The hair upon the scalp and body is apt to be profuse, while deficiency in activity of these glands produces an opposite chain of metabolic conditions, namely, long legs, thin body with narrow chest, or where infantilism is extreme and sexual underdevelopment very marked, there may be obesity and a tendency toward feminine conformation of the body; broad hips, large bust and round conformation of legs and arms.

We know that increased function of the pituitary in the early stage of life is productive of full development of the sexual organs, and increased function of the thyroid has a similar effect. Incomplete development of the genital glands and of the thyroid is frequently noted in the same subject.

Early castration is responsible for hyperpinealism and hyperpituitarism, which are manifested by increased skeletal and muscular growth, but a distinct tendency toward inhibition of the secondary sexual characteristics. Thyroid insufficiency is accompanied by sexual underdevelopment, as it is witnessed in cretinism.

The pituitary body is undoubtedly stimulated to increased activity at the time that the sexual organs first awaken to stimuli incident to coming puberty. This is witnessed by the rapid increased skeletal growth manifested at about this time. The whole character of the individual changes as this sexual awakening becomes manifest. Not only are these phenomena of a physical character, but also of psychical and temperamental as well. The boy in the early stages of adolescence becomes restless, his sexual characteristics begin to dominate him in the selection of company. He becomes bashful and blushes in the presence of girls and scorns their company, while his tastes run toward the company of boys and deeds of daring and valor.

Romance takes hold of him, and at this time he is most apt to acquire vicious habits, unless properly instructed previously by his parents.

His thyroid gland enlarges and his voice begins to change and become coarser. Coarse hair appears upon the pubic region in the axilla and upon the face. His growth is manifested. After puberty is established, hypo-pituitarism is responsible for sexual apathy, impotency, shrivelling of the sexual organs and decrease of their circulation, giving them a cold, clammy sense to the touch. These are prominent symptoms in infantilism which accompanies late involvement of the pituitary, as well as of diabetes and other conditions in which the pituitary is involved.*

Irritations of the sexual glands due to pernicious habits, etc., are responsible for overactivity followed by deficiency of hypophysis, pineal and thyroid. These are manifested at first by increased muscular and sexual development and mental excitability, later by asthenia, apathy and mental dullness. After 45 years, the functionating power of these organs decreases, cellular activity is lessened, and fibrous changes commence to manifest themselves, especially in the thyroid. They are accompanied by lessened activity of the sexual organs, lessened physical endurance and deficiency in oxidation; the temperature becomes lower as a rule, the storing of fat is a prominent feature. The patient becomes more conservative and deliberate, both mental and physical activities are slower.

As the glandular inactivity increases, the signs of senility appear and are manifested by disappearance of some of the subcutaneous fat, loss of the rotundity, and firmness of the tissues, producing wrinkling. And deficiency of oxidation is manifested by pallor and the lessened resistance to cold. Adrenal symptoms particularly show themselves by tendency toward blotches, of pigmentation, etc., and by general darkening of the skin and teeth. General nutrition is decreased.

The part that the male climacteric plays in the life and health of the individual is not as conspicuous as it is in the female, but is nevertheless distinct, and in many individuals there is a noticeable failing in health, commencing at about this time and lasting for several years. It is characterized by the return of many of the neurovascular symptoms which are prominent at puberty. The nerves become unbalanced; the digestive tract disordered, appetite erratic; constipation or other intestinal disturbances appear, and the entire aspect of the individual is changed, showing the enormous part that these internal secretions play in the development and maintenance of the vital functions, both physical and psychical.

*Relation of pituitary body to diabetes will be described in a forthcoming work by the author.

THE NEW YORK COMMITTEE FOR THE PREVENTION OF BLINDNESS.—The foes of wood alcohol scored some strong points in the joint hearing before the Codes Committees of the Senate and Assembly, on the Griffin-Thorn Bill, prohibiting the manufacture and sale of wood alcohol combinations without "poison label." This Bill was drafted by the New York Committee for the Prevention of Blindness which was represented at the hearing by its Executive Secretary, Miss Carolyn C. Van Blarcom and Dr. Ward A. Holden. This measure also has the support of the American Association for Labor Legislation, the New York State Committee for the Blind, the New York Association for the Blind, the Oculists of the Medical Staff of the New York Eye and Ear Infirmary, The Manhattan Eye and Ear Hospital, the Hermann Knapp Memorial Eye Hospital; the State Law and Order Alliance, the Russell Sage Foundation, the State School for the Blind and other influential organizations.

Conspicuous among the supporters of the Bill are the barbers of the State represented through their official organ, *The Barbers' Journal.* A great deal of agitation has been raised lately against the barbers' supply houses which are in the habit of selling to the shops bay rum containing wood alcohol. Attention has been called by the Committee for the Prevention of Blindness to the great danger of using wood alcohol compounds

in barber shops and it has successfully prosecuted a great many cases against the supply men in the last few months. In self-defense the barbers are demanding that the law be made so strict that they will not be in danger of unwittingly placing their customers in jeopardy.

The Bill which is an Amendment to the Penal Law, provides as follows:

"No person or corporation shall manufacture, make, have, sell or offer for sale any article of food or drink which contains any methyl alcohol (commonly known as wood alcohol); or any preparation or mixture containing any methyl alcohol intended for internal use by man.

"No person or corporation shall sell, exchange, deliver, offer for sale or have in a place of sale any methyl alcohol (commonly known as wood alcohol) in any form, or any preparation or mixture containing any methyl alcohol, under or by whatever name or trade-mark the said preparation or mixture may be called or known, unless there be affixed to the bottle or vessel containing the same a conspicuous label bearing the words, "Poison—Likely to Cause Blindness or Death," together with a skull and cross bones and the name and address of the maker, owner or seller, all conspicuously printed in red ink.

"Any person who violates any of the provisions of this section shall be guilty of a misdemeanor."

"Ignorance has been the chief cause of danger from the use of wood alcohol," said Miss Van Blarcom in presenting the arguments of her Committee at the hearing. "If this Bill becomes a law and is properly enforced this danger will be done away with. There is no question about the danger. Very elaborate investigations have recently been carried on by scientists in this country and in Germany and the unanimous opinion is that wood alcohol is a deadly poison not merely when swallowed but when it is applied externally or when its fumes are inhaled."

Miss Van Blarcom cited the case of Antonio Auleta of New York City who was stricken totally blind in one night from drinking a small quantity of anisette containing wood alcohol. This man is not an habitual drinker, but an honest and industrious worker with a wife and five children dependent upon him. A few days later another Italian, Guiseppi Diagostine, also of New York City, suffered a similar fate from drinking California wine. These were only two of many cases that are constantly coming to the attention of the Committee, said the speaker. She also cited cases of blindness to workmen brought on by inhaling the fumes of varnish that contained wood alcohol and other cases of blindness from using liniment containing it.

"Nor is there any doubt about the prevalence of this unlawful and dangerous use of wood alcohol," continued Miss Van Blarcom. "I have personally investigated during the last few weeks over 40 cases of the use of wood alcohol in bay rum alone and started prosecution. We have secured convictions in not only seven of these cases and twenty-one of them are pending. The fines in the convicted cases are inadequate. Many cases that should be prosecuted don't come in the present law. There is a crying need of stricter legislation."

SURGICAL HINTS.—Sprained ankle and wrist are frequently mistaken for fracture, and an X-ray examination may be required to clear up the diagnosis.

Fracture of the neck of the astragalus or of the tip of the malleolus has sometimes been treated as a case of sprained ankle.

Without X-ray examination it is extremely difficult to diagnose many fractures of the foot and hand.

The flouroscope will often fail to show a fracture, which can be clearly demonstrated by a radiograph.

In young subjects certain lines in an X-ray picture may be mistaken for fracture by the inexperienced; thus the elbow of a child will give shadows of numerous epiphyses. Hence the importance of having the picture interpreted by an expert.—Joseph Fuld, M. D., in *International Journal of Surgery.*

ABSTRACTS

RETROVERSIC UTERI.—After noticing the common lack of mention of the subject of posterior displacements of the uterus occurring without being caused by obstetric injuries, W. C. Gayler, St. Louis (*Journal A. M. A.*), says that a very few gynecologists are now adding a fourth cause, namely, the "dorsal position during the puerperium." The uterus after delivery is more freely movable than at any other time and is large and heavy. It occurred to Gayler in delivering a woman who had previously had the round ligaments shortened for retroversion that it would be worth while not to put them under strain after delivery. He asks, "Are we ever justified in putting the recently delivered woman in the dorsal position? The uterus is then larger and heavier than at any time during the life of a woman, excepting before delivery, when a posterior position is impossible. The ligaments have not undergone involution, and cannot support the uterus. The normal bladder irritability is usually lacking for several days, often causing unsuspected bladder distention. An overdistended bladder, more than anything else, will tend to push a uterus out of position. In short, it would seem that the dorsal position during the puerperium is the ideal condition for the production of retroversic uteri. We have: 1. Temporary weakened ligaments. 2. Lack of any but ligamentary support. 3 Exceedingly heavy and freely movable uterus." Practically all the text-books on obstetrics, he says, ignore the position during the puerperium period but some of the authors to whom he has mentioned the subject promised to include it in future editions. Gayler thinks that the dorsal position should be prohibited unless proper drainage of the lochial discharge should demand it.

THE NECESSITY FOR SPECIAL EDUCATION IN INFANT HYGIENE, WITH PARTICULAR REFERENCE TO THE MEDICAL PROFESSION. —Special education in infant hygiene is a necessity, because, in the first place, says Linnaeus E. La Fetra, writing in *Pediatrics*, the mortality among infants and young children is higher than at any other period of life. More than one-quarter of the total deaths of the community occur in children under the age of 3 years. Twenty-five per cent. of infants born alive die during the first year, seven per cent. more during the second year and three per cent. more during the third year; so that of 100 new-born babies more than thirty-three will be dead, under ordinary conditions, by the end of the third year.

In considering the subject of infant hygiene, just as in dealing with the baby we cannot separate the baby from the mother without doing harm, so there should be the closest co-operation between the departments of obstetrics and pediatrics. That part of the course dealing with pre-natal care and the prevention of mortality during childbirth might well be given by the department of obstetrics. In addition to lectures, the instruction should include visits to properly conducted maternity services, infants' consultations or milk stations, dairies and milk laboratories as well as infants' hospitals. There should also be installed a small model or miniature exhibit, showing what is bad as well as what is good for the mother and the baby, with especial reference to the living-room or nursery, and its ventilation, the baby's crib, clothing, care of the milk and bottles, table for food preparations, arrangements for bathing, for fresh air, etc. The greatest amount of time and effort should be devoted to the subject of infant feeding, with emphasis on maternal nursing.

The chief consideration is that every student should have indelibly impressed upon his mind the influence upon infant life and infant health of the following:—

(1) Heredity.—The teachings of eugenics as regards parenthood, with special reference to insanity, alcoholism, tuberculosis, syphilis and gonococcus infection; discussion of measures advisable. Fitness for marriage; school instruction in sex hygiene; "little mothers" classes. The co-operation of the clergy might be secured by their attendance at these lectures.

(2) Pre-natal Care.—Occupation, exercise, diet; preparation of breast for nursing. Assistance by the State.

(3) Childbirth.—Prevention of obstetrical deaths and of sepsis in mother and babe; prevention of blindness; the question of midwives; advantages of birth registration.

(4) Special care of premature and feeble infants.

(5) Infant Feeding.—General principles; breast milk and advantages of maternal nursing; promotion of maternal nursing; aids for nursing mothers; wet nurses; management of illegitimates and foundlings.

(6) Weaning.—Indications for, and advantages of gradual weaning; treatment of indigestion in nurslings.

(7) Artificial Feeding. — Principles; cow's milk, its production and care; pasteurization and boiling, their effects and uses; modified cow's milk, its advantages over patent foods; usefulness of patent foods in special conditions; treatment of diarrhea in bottle-fed infants.

(8) Normal Development in Infancy.—Weight, teething, muscular co-ordination, mental development.

(9) Hygiene of the Baby.—Bathing, clothing, airing, "hardening," sleep, exercise, rest.

(10) Hygiene of the Nursery.—Crib, perambulator, bottles; nipples and preparations of food.

(11) Prevention of Infection.—"Colds," diarrhea, contagious exanthemata, whooping-cough and tuberculosis.

(12) Agencies for infant care and child help, correlation of; needs in the campaign against infant morbidity.

In closing I will simply reiterate that, in matters of hygiene, what is best for the baby is best for the race.

OVARIAN PREGNANCY.—This subject is discussed at length and, together with the illustrations, makes a most interesting article, in the March number of the *American Journal of Obstetrics*. The author, M. Caturani, of New York, writes:

"Up to a few years ago the best authorities on ectopic pregnancy refused to recognize the possibility of ovarian gestation, and the cases reported as such were not sufficient to really warrant their acceptance. Tait, Sutton, and Webster emphatically denied the fertilization and implantation of the ovum in the ovary. The last author based his opinion on two points.

First, the insufficient evidence in the cases described.

Second, the assumption founded on his theory of the decidual reaction that the implantation and development of the human ovum is possible only in tissue derived from the Müllerian tract, and consequent inability of the ovary to develop such specific reaction (Webster, *Ectopic Pregnancy*, Edinburgh and London, 1895).

Decidual formation and embedding of the ovum in the ovary are still unsolved problems, owing to the infrequent occurrence of these cases, and absence of early uninterrupted specimens.

After the most careful study of all the sections I found what I would only call an attempt at decidual formation. Sparcely grouped cells are found along the margin of the ovum, or better in the boundary between fetal structure and ovarian stroma.

The cells are large polygonal, or oval, with one or two round nuclei, they took the stain very lightly and are embedded in a layer of fibrin which lies at the boundary of the two structures. Cells of similar characters are scattered in the ovarian stroma and around blood-vessels.

The fact is worth considering that no similar cells are found in the fibrin and fibrous tissue covering the inner aspect of the corpus luteum, or in the fibrous tissue constituting the septa of the corpus luteum.

This so-called attempt at decidual formation is more marked where the invasion of fetal elements into the ovarian stroma seems most active.

The shape, the size, and the manner of assuming the stain seems to differentiate them from the Langhans and syncythial cells; these last two varieties, however, seem to proceed into the tissue more closely grouped.

Whether the fibrinous layer surrounding the ovum and containing these cells is the representative of a true decidua is only a matter of conjecture. The alteration in the relations of tissue, due to the rupture, and changes due to delayed operation, is responsible for this unfavorable condition.

The principal features of this attempt at decidual formation, viz.:

(a) Its occurrence in the stroma of the ovary.

(b) Its marked appearance where the invasion of chorionic elements is more active.

(c) Its absence in proximity of the corpus luteum and fibrous constituents, are conditions which demand an explanation.

The first fact would indicate the reaction of a connective tissue to the specific action of the ovum. The connective tissue of the ovary would respond to the specific stimulus (invasive properties of the chorionic elements) with an attempt to resist the invasion. It is only logical to admit that the line of defense should be more marked where the invasion is greater.

The third condition is dependent on the unsettled questions connected with the formation and function of the corpus luteum.

The origin which the most recent investigators ascribe to the lutein cells from the connective cells of the internal theca, the apparent affinity of the decidual and lutein cells, the function ascribed to the corpus luteum of directing the normal development of the ovum, and controlling the invasive power of the chorionic elements, could possibly explain why the follicle should be considered good ground for the embedding of the ovum, and the synchronous formation of the corpus luteum should offer a relative resistance to the invasion of chorionic elements. In other words, it seems possible for the layer of lutein cells to take the place of the decidua in its functions.

Further, the absence of decidual cells in and about the corpus luteum, and the absense of chorionic cells outside of the corpus luteum, in the corresponding ovarian stroma, would seemingly substantiate such hypothesis.

But we need positive evidence, based on extensive experience, before we may arrive at such a conclusion. I wish here to emphasize the fact of the intimate relation existing between the fetal tissue and the well-formed corpus luteum in my case, considering that only a thin fibrous layer connects the two structures. The most complete evidence of this fact is found in a careful study of the different sections in which it is easy to discern the progressive stages on the relation of the two structures. Some sections show the fetal elements completely enclosed within the corpus luteum, the latter forming a complete ring.

Others show the fetal tissue breaking through the lutein partitions, to pass directly outside into the ovarian stroma.

Still others present the appearance of the ovum almost completely crowding out the corpus luteum with only a small portion of the lutein cells remaining. This evidence seems to be conclusive for the implantation of the ovum directly in the follicle.

In conclusion he states:

First, that macroscopical and microscopical evidence establish beyond any doubt the primary ovarian nature of the gestation.

Second, the intimate relation of fetal tissue and corpus luteum in the various stages, might be a proof of the imbedding of the ovum in the follicle.

Third, probably the formation of the corpus luteum partly assumes the function of the decidua only as a preventive of the invasion of the fetal elements. This view is in marked contrast with the views expressed by Teacher and Bryce, and the behavior of decidua and chorionic elements in their interlacing in the implantation site.

Fourth, decidual formation is only present as an incomplete attempt in the ovarian pregnancy, and is a result of the reaction of the stroma to the specific action of the ovum. Every connective tissue in the genital organs is probably able to react in the same way as the Müllerian to the genetic influence.

Fifth, the incomplete formation of decidua explains the tremendous invasion of the stroma and its surroundings with chorionic elements.

Sixth, the last condition is the cause of early interruption of ovarian pregnancy.

USE OF RADIUM.—Newcomet, in his article on this subject in the *Therapeutic Gazette*, says: "Where radium is to be employed the quantity should be sufficient to dispel all doubt that failure to obtain the desired result might possibly be due to that cause alone.

From the individual reports of cases results often appear to be extraordinary, but frequently upon closer examination it will

be found that the element of time has not been given sufficient cognizance, nor has the material been properly digested before arriving at ultimate conclusions. The word cure is too often used to imply that the local disease has temporarily disappeared, thereby giving a false interpretation of the results *per se.* * * * In Germany the use of mesothorium has to some extent displaced radium, it being claimed by some individuals that the character of radiation is far more active, and therefore the result to be expected should be proportionately better; here again the element of time is needed for the proof of this statement. The objection that is raised to the thorium preparation is that the rapid disintegration requires constant correction, at frequent intervals. If this procedure is not observed the actual amount of radiation given at a definite period would be unknown. It is not difficult, however, for one accustomed to its use to make this calculation, but it must be remembered that its total disintegration is only a matter of a few years.

The prevailing idea that these radioactive elements will prove to be a panacea is false and has misled many, giving them a mistaken feeling of security that has often caused these unfortunate sufferers considerable inconvenience. It cannot be denied that in some instances it has afforded relief, sometimes only temporary, often permanent, that is most marvelous; it has, and will have, a distinct field of usefulness in a certain class of cases, and so far there seems to be no means to substitute these radioactive elements, although at the present time we cannot have hard and fast rules to govern the exact character of case that will be benefited by this form of radiation, yet it must be admitted that certain conditions exist which are, and will be, treated with better results by the Roentgen ray. This is well exemplified in some forms of carcinoma of the breast.

It might be said in comparison with the Roentgen ray, aside from any peculiar physical property these radioactive elements may possess, that there are two local conditions favoring their use: First, in the treatment of disease in cavities, such as the mouth, rectum, or vagina; and secondly, where an intense local action is desired with little disturbance of the surrounding tissue. The technique used, in all forms of radiation, is a matter for serious consideration and calls for detail in future study. We have all heard references made to some conditions relieved by one operator which have not been previously benefited by another. It must not be inferred from this that the latter operator had more radioactive material, possessed a more refined technique or better Roentgen apparatus than the former—indeed, in several instances that have come under observation the conditions were rather the reverse, otherwise this point would not be worth considering. While on general principles large amounts of any of the radioactive elements should be employed, yet some malignant processes will yield to extremely small quantities; and many instances have been reported in which the amount used has been less than 5 milligrammes of radium element.

No doubt all malignant processes removed by operation will be radiated in the near future, for it seems that any agent of such value in these late cases should be a valuable postoperative procedure.

In carcinoma in and about the mouth we are again forced to acknowledge the powers of radium and mesothorium. Although the results generally do not appear to be so good as those of the uterus, they have in several instances been most gratifying. Here again we notice the same wide variation of results. Often those cases which seem to be the most favorable from their history and general appearance are in the end the most fatal; conversely, those which appear to be extremely unfavorable change for the better with such ease that it is often inconceivable. In these two last mentioned regions there must be some direct action between the variety of disease and the form of radiation, for these favorable results were not observed in cancer of the colon. Results seem to be better where it was possible to bring the radium in direct application in the same manner as was done in the mouth and uterine condition.

That the action of these rays differs from the X-ray is well shown in the list, of the one hundred patients treated, where good results follow the application of radium after previous use of X-ray failed, notably in two cases of sarcoma and one of papilloma. This fact has been observed by others, and in a

sufficient number of cases to prove that there is a difference in the so-called selective action of these rays.

In ending, while not expressing any general conclusions, attention was called to the fact that all the results, in the 100 cases reported, were accomplished by applications from 1 to 20 milligrammes of radium, with very little filtration, where the condition was superficial; in those of any depth it was customary to use a screen consisting of a piece of lead a millimeter in thickness, wrapped again in cotton and rubber tissue (often a glass or celluloid tube was used in place of the rubber tissue). In several instances burns were produced, but healing promptly followed.

TEMPERATURE IN TUBERCULOSIS.—An anomaly in temperature curve and pulse-wave not described in any text-book consulted and very little mentioned is the literature of tuberculosis is described by John Ritter, Chicago (*Journal A. M. A.*), as follows: "If in a slightly advanced tuberculosis subject the pulse-waive and temperature-curve are very carefully observed in the early morning immediately on rising, always in the sitting posture, these observations minutely noted, and the patient then directed to proceed to make the necessary preparations for dressing, such as brushing the teeth, shaving, washing, combing the hair, then dressing, all of which should consume about thirty minutes, and then asked to sit down and the pulse and temperature again carefully taken, one will observe that the pulse has increased in frequency from ten to twelve beats, but that the temperature has dropped correspondingly from 0.2 to 0.6 degrees." As a control to these findings, he obtained the early morning temperature of a number of nurses and medical students, taking a second observation about thirty minutes after the first, both very carefully and accurately taken daily for one week, the subjects being presumably in normal health. In every case a slight increase from one to four beats was noted, but no change in temperature. He also has had the patients make the observations for him, and some of them have called particular attention to the phenomenon in their own cases. In looking over the literature of the last few years he has found but a single reference to this symptom. A careful study might show it to be of great diagnostic value, not only in moderately advanced cases, but more particularly in early or suspected cases. It would be necessary for a great many of these observations to be made for a long time and through the course of the disease and compared with the temperature curves of the perfectly healthy.

THE PHENOMENA OF INFECTION.—Victor C. Vaughan, Ann Arbor, Mich. (*Journal A. M. A.*), contradicts Doerr's statement that bacteria have a relatively simple molecular structure and asserts that all infecting agents are living proteins capable of growth and multiplication. He says that their pathogenicity depends on their ability to grow in the body, their rapid multiplication and wide distribution leading to acute systemic disease, and their slow or localized growth leading to chronic or localized disease. A new ferment may be formed or an old one modified by which the body is protected against certain diseases, such as smallpox.

Vaughan is convinced that infective bacteria contain an intracellular poison common to all proteins, and that the poison which kills in all infectious diseases is the same; but the specificity of the bacteria lies in the non-poisonous groups, and the symptoms differ according to the organ or tissue in which the poison is liberated through the splitting up of the virus, which cleavage is due to a specific ferment.

By means of animal experimentation Vaughan became convinced that the disastrousness of the results of an infective disease is determined by the rapidity of the growth of the virus and the amount of accumulation of foreign protein at the time of effective sensitization. He says that, as Gamaléia concluded, twenty-five years ago, the febrile process is the result of the reaction of the organism against the bacteria and not of bacterial action.

Vaughan has produced experimentally in animals, acute, remittent, intermittent and continued fevers and their accompaniments. Protein fever, he says, which includes practically all clinical fevers, is a result of parenteral protein digestion, in which the ani-

mal cells furnish the ferment. We are immune to most bacteria and protozoa because they are destroyed, as soon as they enter the body, by the non-specific proteolytic ferments probably secreted by the leukocytes, and normally in the blood and tissues. A protein not thus disposed of is deposited in some tissue or organ for which it has a predilection, such as the pneumococcus in the lungs. The time of development varies with the sensitizing protein. Solution of the problems of the conditions affecting a fever awaits further research.

He gives the evidence for and against this theory, drawing from the facts presented the conclusion that, although the exact chemical structure of the poison produced by the disruption of the protein molecule by chemical agents is not known, and though it has not been proved that the poison formed *in vitro* is identical with that formed *in vivo*, yet they are closely related, as is inferred from their physiologic action. He warns that, since every unbroken protein contains a highly poisonous group, serum and vaccine therapy should be carefully used. He protests against classifying toxins and anaphylactogens together as "antigens." The fact that tuberculin, according to most investigators either does not sensitize or does so imperfectly raises a question as to its usefulness in therapeusis, though it is an excellent diagnostic agent and through the tolerance established by it to the tuberculopoison should be used unless the more completely isolated poison is preferable.

DIAGNOSIS AND TREATMENT OF BRAIN ABSCESS.—Dr. Wm. Sharpe in the *Laryngoscope* says, "No other intra-cranial condition offers greater difficulties of diagnosis and of successful treatment than brain abscess. It can simulate many intra-cranial lesions so closely that an operation, when advised, is performed frequently as an explorative procedure; this is particularly true of those abscesses located above the tentorium.

In conclusion he emphasizes the following points:

A. The diagnosis of brain abscess: 1. The importance of the history, particularly of a previous otitis media. 2. The periodicity of its symptoms and signs—there being intervals of complete relief and comfort. 3. The frequent absence of signs of intracranial pressure in the fundus of the eye, when the abscess is situated above the tentorium. 4. The great frequency of abscess in either temporo-sphenoidal lobe, and some of the diagnostic aids for a definite localization of the abscess in them, as well as in the frontal and cerebellar lobes.

B. The treatment of brain abscess: 1. Operation for brain abscess is usually an exploratory procedure. 2. The dangerous and unsurgical procedure of puncturing the dura "blindly" with a needle in search of the abscess. 3. The danger of not only a meningitis, but also of medullary edema is very great in trying to locate the abscess with the needle through a *small* opening and especially through an infected area, such as the mastoid. 4. The advisability of a sub-temporal decompression in abscesses situated above the tentorium—both to lessen the intra-cranial pressure and thereby to avoid impairment of vision and the danger of medullary edema while waiting for the abscess to localize itself and also to lessen the danger of a meningitis. In abscess of the temporo-sphenoidal lobe, the decompression allows a careful exploration of the entire lobe in search of the abscess. 5. In abscess of the cerebellum, the great danger of medullary edema should be avoided by a large opening; if the tension is very high, then the removal of the posterior half of the foramen magnum is essential.

ELEPHANTIASIS.—J. Patterson, Chicago, (*Journal A. M. A.*), reports a case of filarial elephantiasis in a woman born in Austria, who had removed to Minnesota without traveling or residing in a tropical region. No similar case was known to her husband and friends in that part of Austria from which they came. Encapsulated filariae were found in sections of the thickened abdominal wall. The patient gave no history of cellulitis preceding the condition and no fever such as precedes a true tropical elephantiasis. What specific organism was present could not be determined, but it was considered probably that filaria of Bancroft. The blood of a horse is suggested as a possible source of infection.

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THE ABDERHALDEN REACTION AS A GUIDE TO RESEARCH AND TREATMENT.

An interesting editorial in the *Lancet-Clinic* recently says that many diseases have baffled research not only because of lack of a large number of centers of investigation, but because of the absolute ignorance which prevails of the parts most seriously at fault in the disease.

Under such circumstances the defensive ferment reaction shows the location of the fault and often also the character of that lesion. When these elements of the disease have been discovered there is much greater hope of solving the problem.

It has been shown by Fouser that the genital glands are early dystrophic in dementia precox. This one fact is the first opening which science has made in solving the problem of the disease that furnishes much more than half the population of our insane asylums. From this one opening into the entrenchment of ignorance of the insanities the fall of this tremendous fortress of mysticism and cruelty will follow.

Pernicious anemia, a disease which is most mysterious in its appearance, may be shown by happy application of this test to be due to a primary lesion in a region far from any now suspected of fault.

The arthritides are already believed to be secondary to primary infection through such atria as the tonsil, the teeth or the appendix. It appears perfectly within the bounds of probability that in individual cases the Abderhalden test will demonstrate the atrium of infection. For such a purpose "fundaments" should be made from tonsils, from alveolar tissue, from gall-bladder tissue, from the appendix, from tubes, from ovaries, from the kidney, especially the calix and pelvis, and from the colonic mucosa. Such a demonstration of the atrium of invasion is quite as desirable as a determination of the character of the invading micro-organisms. If the defective part is accessible it can be ablated and further invasion arrested.

The onset of arterio-sclerosis is due to some toxic process set up by degenerative changes in indeterminate parts of the body. If often appears early in life and from a source unsuspected until the autopsy reveals it. Now, in such a case, the Abderhalden reaction promises to pick out the affected part and offer it as the proper subject of therapeusis.

The diseases of the heart are often due to invasion of micro-organisms through an undiscoverable atrium. If the micro-organism is found in the blood and the atrium is closed to further invasion, an auto-vaccine or some one of the many mixed vaccines may determine a cure of a patient that a few years ago would have been given up to a hopeless endocarditis.

Such symptomatic conditions as asthma, hay fever, neurasthenia, indigestion, fainting spells, and even *petit mal*, may be cleared up by this test and the patient put in the way of optimistic treatment.

Every laboratory should use this method first in an experimental way until the tech-

nique is mastered and a supply of reliable "fundaments" or "substrate" is secured, and then it may be applied in the routine work of medical practice.

IMPROVED METHOD OF VACCINATION.

Vaccination from the time of its discovery has been performed by scarifying a spot on the arm and applying the vaccine lymph. This method of application has brought forth vigorous protest from the child and sometimes the adult about to be vaccinated. I should think that the improved hypodermic medication would have regulated this cruel and barbarous method into oblivion. In the daily press every now and then we read of cases of blood poisoning or tetanus, caused, it is said by impure vaccine. No one has criticised the technique of vaccination but the vaccine itself. The manufacturer of vaccine is hedged with so many precautions both by the government and local health boards that such a thing as impure poisonous vaccine is impossible, so that any accidents occurring after such a trivial thing as vaccination is a crime which may be laid to the door of the physician who vaccinated such a case. Usually the anti-vaccination societies make great capital of such accidents.

The principle of vaccination is to inoculate the patient with cow pox lymph which produces in the patient the same symptoms as in the animal and renders him immune to small pox, therefore why not inject the lymph subcutaneously or intravenously and avoid the dangers of infection from clothing or undue handling with soiled fingers?

The method used by the writer is to dilute the glycerinated lymph with 5 or 10 minims of sterilized saline solution, place it in a syringe and inject it in the arm, if it is an adult, or between the shoulder blades in a child or in the gluteal region. The skin is previously sterilized by painting with tr. iodine, a fold of the skin is lifted between the thumb and forefinger and the needle inserted with a quick motion. The inoculation is performed before the child or adult has had a chance to make any resistance.

It is a cleaner, more aseptic and a manifestly more scientific way of vaccination and the result is fully as good, although not as spectacular as scarification. The reaction occurs locally as well as constitutionally, is evidenced by slight tenderness and infiltration, at the site of the injection, enlargement of the lymphatics and slight elevation of temperature.

I have come across very ugly scars caused by the old method, some patients having as many as 5 or 8 scars on each arm and in some cases the scar tissue shows a somewhat malignant appearance. I have seen quite a few cases where scarification produced a keloid. One case which occurred in Austria became infected with syphilis by being scarified with the same needle that had been used on a syphilitic patient. Such careless methods of vaccination still prevail on board ships where the overworked medical practitioner must vaccinate several hundred immigrants before landing.

I believe it would only be fair to revise the sanitary codes making it obligatory to use the hypodermic needle. The hypodermic method leaves no scar to be scratched over with soiled finger nails. A drop of collodion placed where the needle entered seals the spot and there is no need of vaccination shields, adhesive straps and sore arms and the risk of septicemia or tetanus.

Vaccination performed by this method is free from criticism. It is bloodless, so inocuous that even the most rabid anti-vaccinationist will submit to it.—Emile Brunor in *Pediatrics*.

Ten years ago James Huneker, the critic, took seriously the compositions of Richard Strauss and Claude Debussy. Most of his colleagues were merely horrified at the novelties displayed by those two progressives. In the May *Century*, Mr. Huneker, writing under the head of "Music of Today and Tomorrow," publishes a defense of the present day Viennese composer, Schoenberg. Mr. Huneker is critically always five or ten years ahead of the rest of the literary and artistic world.

NEW BOOKS.

Diseases of the Stomach, Intestines and Pancreas.

Diseases of the Stomach, Intestines and Pancreas. By Robert Coleman Kemp, M. D., Professor of Gastro-Intestinal Diseases, New York School of Clinical Medicine. Second edition, revised and enlarged. Octavo of 1,021 pages, with 388 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $6.50 net; half morocco. $8.00 net.

The first edition appeared in 1910, and was reprinted three times before this new edition appeared. This fact demonstrates the popularity of Kemp's book, and it merits it fully. The book is as practical as it is scientific and gives a wealth of information, all with that personal note which makes such books really readable. Surgeons as well as physicians will find here an abundance of valuable details. The illustrations are of superior type as in all publications of "Saunders." Exception might be taken to the Indican color scale. It is beautifully printed but not serviceable. The iodine admixture is readily eliminated by washing with water and then adding KOH ten per cent. solution—not necessarily thiosulphite. The diet in typhoid is somewhat obsolete. The exact location of the pylorus is not given identically on several plates. The recent discovery of the "vitamins" as a necessary constituent of food will probably be discussed in the next edition which it will not take long to appear. Altogether this is one of the best text-books we have in America.

The Chemic Problem in Nutrition. (Magnesium Infiltration.)

A sketch of the causative Factors in Disorders of Nutrition as Related to Diseases of the Nervous System. By John Aulde, M. D. Illustrated with four plates. Philadelphia. John Aulde, M. D. 1912.

The author advances a hypothesis that practically all diseases are more or less due to "acidity," "depletion of lime," and "magnesium infiltration." The book is full of original ideas and apodictic assertions well worth observing. Though not everything he says is quite clear he himself is clearly persuaded of the correctness of his views. We recommend the book to the lovers of original literature. There is an abundance of thought given to the thesis.

Cardiovascular Diseases.

Recent Advances in Their Anatomy, Physiology, Pathology, Diagnosis and Treatment. By Thomas E. Satterthwaite, A. B., M. D., LL. D., Sc. D. Consulting Physician, etc. Lemcke and Buechner, 32 West 27th Street, New York City.

The well known author in this volume of 166 pages summarizes the more important of the recently gained facts in a very readable form with excellent illustrations. All he says is of great importance also to the general practitioner if he is interested at all in the advance of his science. And as he will look for these matters in vain in his text-books, the reviewer would urge his confreres to buy and study this volume. They will certainly not regret it.

Principles of Hygiene.

Principles of Hygiene: For Students, Physicians, and Health Officers. By D. H. Bergey, M. D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition, thoroughly revised. Octavo of 529 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $3.00 net.

The fulfilled purpose of Bergey's Principles of Hygiene is to offer physicians as well as others, whose work makes a knowledge of sanitary science necessary, a compact book on the subject in hand. Physicians employed as local health officers will find the book a reference work of help and even those

specializing in sanitary science will not be disappointed in the book's usefulness. A class who should have Bergey's Hygiene in their libraries are architects and sanitary engineers.

Among the features deserving of special mention is the space devoted to a consideration of a community's milk supply and a presentation of Federal quarantine laws, inincluding interstate regulations.

Hypodermic Medication.

Hypodermic Medication. By Frank Webb, M. D., Member of Connecticut Electic Medical Association, National Electic Medical Association, with prefatory remarks by John Uri Lloyd, Ph. M. Published by the Therapeutic Publishing Company, Inc., Boston, Mass. Price, cloth, $1.00 net.

In a naively written little book the author describes experiences he has had with certain remedies popular with the eclectic school. These remedies have been used hypodermically and, so the author assures us, have worked some marvelous cures.

Modern Materia Medica.

Modern Materia Medica, third edition, revised and enlarged. Published by the Druggist's Circular, 100 William Street, New York, 1912.

This book contains the source, chemical and physical properties, therapeutic action, dosage, antidotes and incompatibles of all additions to the newer materia medica likely to interest physicians, together with the name and address of the manufacturer. Toward offering information on remedies more recently to the profession, the book will be found of much service.

Think what it would mean to the art world if there existed the note-book of Praxiteles giving his intimate thoughts on art and life. The French sculptor, Rodin, who in the opinion of many authorities is to be mentioned in the same breath with Praxiteles, has permitted the publication of extracts from his note-book, and the first instalment will appear in *The Century Magazine* for May.

The Art of Today.

A thoughtful and sincere attempt to sum up the situation in art today is made in *The Century Magazine* for April. The editor says that a revolution against settled art standards is now in full career and "it is time that we study signs, seek to define directions, and somewhat forecast the convention that is to come."

Under the general heading of "This Transitional Age in Art," have been gathered five authoritative papers, covering every phase of the subject and profusely illustrated with more than fifty pictures, some of them in full colors. The subjects are: I. "Is Our Art Distinctively American?" by John W. Alexander, President National Academy of Design; II. "The Painting of Today," by Edwin H. Blashfield, President Society of Mural Painters; III. "The Painting of Tomorrow," by Ernest L. Blumenschein; IV. "The Point of View of the 'Modern'," by Walter Pach; V. "The Ancestry of Cubism," by Jay Hambidge and Gove Hambidge.

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ARE THE LUNG-LESIONS IN PHTHISIS PRIMARY OR SECONDARY?

By THOMAS J. MAYS, M. D., Philadelphia, Pa.

Whatever we may say of the varying characteristics of phthisis, and, however much stress we may lay on the importance of giving individual treatment to each case independently of other cases in its class, the proposition must sooner or later be accepted that the remedy to which one consumptive responds beneficially, must fit and act favorably on the great majority of all cases. For, admitting that no two cases of this disease are exactly alike, the contention that all cases are the unvarying product of a specific pathology, and are amenable to the same general treatment, is not invalidated.

Indeed a disease like phthisis is so multiplex in its manifestations that in its last analysis it often produces such a degree of bewilderment that it is difficult to differentiate its beginning from its end. It is like an old-fashioned storm, when, in the wake of its triumphant fury we witness shattered forests, devastated homes, wrecked ships, dismantled and disrupted coast lines, with ruin and death on every hand; and when we come to search for the one cause which is responsible for such far-reaching and varied desolation, we are prone to refer it to the power of the wind, or if we are inclined to superstition, to the goddess of the air, or to some other mythical force, and lose sight of the cardinal truth that the real and ultimate source of the storm resides in the sun's sudden disturbance of the atmospheric temperature.

So, when we view the salient symptoms of phthisis, like cough, dyspnoea, rapid pulse, fever, sweats, loss of appetite, vomiting, diarrhoea, amenorrhea, tiredness, exhaustion, nervousness, etc., we are likewise inclined to the conclusion that, because the lung-disease is the most apparent and prominent mark in the general disruption, it is the central source of trouble around which all the accompanying symptoms revolve, or in the default of such a conception we may assign any passing fetish as a cause.

However, when phthisis is viewed from a central position, it is apparent that the pulmonary affection is but a small part of the whole process of disintegration. In other words, the lung trouble does not by any means reflect the degree of the disease which is present in the body, but is merely an index of the ravages which exist throughout its whole domain. In this connection it is of surprising interest to note the close resemblance between the effects which are produced by the action of some of the metallic poisons, notably by that of mercury, and the prominent symptoms which characterize the disease under consideration.

Thus Kussmaul, (*Untersuchungen ueber den Constituellen Mercurialismus*) after showing that phthisis is four times more prevalent among mercury workers than it is among the general adult population, he demonstrates that mercurialism presents a picture in the human subject which is a complete symptomatic counterpart of this disease. Among the earliest symptoms of mercury intoxication are exhaustion, shortness of breath, impaired voice power, tremor, general irritability, cough, expectoration, and oppression of the chest. Then follow pulmonary disintegration, emaciation, rigors, fever, colliquative sweats, dizziness, giddiness, hæmoptysis, pain in the chest and extremities, rapid pulse, diarrhoea, irregular menstruation and amenorrhoea, paralysis, convulsions and death.

The immediate nervous phenomena which are associated with the accompanying pul-

monary symptoms are intense headache, ringing and fullness in the ears, flashes of light, the tremors in many instances being more marked in the upper than in the lower extremities, and paralysis and convulsions. It may also be added that women who suffer from mercurial tremor abort very readily, and that their surviving offspring is very susceptible to phthisis.

We have here then presented to our view a more life-like picture of the natural genesis of phthisis in the human subject from inception to its close, and this too through the agency of a single nerve poison, than was ever evoked by inoculation of the lower animals with tubercle bacilli—a clinical experiment which demonstrates conclusively that the bacillus only plays a fifth-wheel part in the etiology of this disease.

TUBERCULOSIS FIGHTERS DISCUSS NEW METHODS.—Leaders in the anti-tuberculosis campaign from all parts of the United States will assemble in Washington, May 7th, at the opening session of the Tenth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, at which time it is expected that President Wilson will comment on the progress of this movement during the last ten years.

Among the significant subjects which will be discussed in the two-day session, probably one of the most important will be a discussion before the Advisory Council on the question of the medical examination of employees, at which time papers will be presented showing how the regular inspection of all employees in large industrial corporations in Chicago and elsewhere has helped to increase efficiency and has proven "good business."

Important topics to be discussed before the Sociological Section of the meeting include "The Family and Tuberculosis," taking up questions of childhood infection, prenatal and early care of children, and those dealing with the school child; the difficult problem of what to do with cases discharged from tuberculosis sanatoria, with reports of investigations which will be the basis for interesting experiments to be tried in New York and Philadelphia in the employment of consumptives in the white goods trades; and the relation of public health problems, both state and municipal to tuberculosis.

Among the most interesting papers before the Pathological Section will be several significant reports dealing with the most recent experiments in attempts to immunize cattle against tuberculosis. The Clinical Section of the Association will discuss some of the latest methods of the treatment of tuberculosis, particularly the use of artificial pneumothorax and other forms of pulmonary surgery.

The President of the Association is Dr. John H. Lowman of Cleveland. The chairmen of the various sections are Dr. Theodore B. Sachs of Chicago, Advisory Council; Dr. Louis V. Hamman of Baltimore; Clinical Section: Dr. Paul Lewis of Philadelphia; Pathological Section: and Dr. R. H. Bishop, Jr., of Cleveland, Sociological Section.

TO DISGUISE CASTOR OIL.—Klein recommends the following method of administering castor oil, which he learned from the Arabs: Pour 15 to 20 grams of castor oil into a glass of milk, and warm the mixture, stirring frequently. In a few minutes an emulsion is formed, which may be sweetened with orange peel syrup. In this form the oil loses its disagreeable taste, and besides, smaller doses are required to obtain the desired results. Fifteen to twenty grams will usually be sufficient to act as a purge in the adult.—*Medical Summary.*

TEST FOR BILE IN URINE.—Chloroform, as a test for bile in the urine, is delicate and certain. All that is necessary is to agitate a few drops of it in a test-tube, along with the suspected urine. If bile is present, the chloroform becomes turbid and acquires a yellowish hue, the depth of which is in proportion to the amount of bile present in the urine. If no bile is present, the test-fluid remains liquid.—*Medical Summary.*

A RATIONAL GERM CONCEPTION.

By A. T. CUZNER, M. D., Gilmore, Fla.

In nature we find the lower forms of life are the most prolific.

We also find these entities can only proliferate when conditions and environments are favorable.

In our atmosphere there are located an infinite number and kinds of minute organisms. These vary from time to time both in number and kind; only waiting on suitable conditions and environment.

Thus we find the fermentive spores are only waiting for a suitable medium in order to fulfill their life history.

The putrifactive germs likewise are waiting for dead animal matter, a proper temperature and sufficient moisture to undergo their processes of life history.

The whole principle of food preservation is to isolate the material to be preserved from contact with these germs of various kinds.

There are two processes—a high and a low temperature—together with an isolation.

If the temperature surrounding the material to be preserved is sufficiently low—as in cold storage—the germs cannot proliferate. Again—a high temperature destroys these germs, and if the material subjected to this heat is at once isolated from all contact with germs, or the oxygen of the atmosphere, putrifaction does not ensue.

These facts are so well known that it would seem unnecessary on our part to state them.

However, we find them required in our conception.

In the early days of the *germ-theory* of disease, it was found that the tubercular bacillus was always associated with consumption.

"A man is known by the comapny he keeps!" Hence, the tubercular bacilli are charged with causing the disease.

We believe the disease tuberculosis antidates the invasion of the bacilli.

In advanced stages of the disease when the tissue structure breaks down we have streptococcus and staphylococcus.

Are these accompaniments of tuberculosis necessary as a cause of the disease?

Just here we will quote from a paper we read before the Section of Physiology and Dietetics of the American Medical Association at the meeting at Denver, Colo., June 7-10, 1898.

Our view of the role microbes play in disease is as follows:

The cell formation of our bodies is constantly dying. As the vital force leaves them, and their life work is done, they take on decomposition forming of their debris toxins.

All organic tissues undergo three distinct phases in their history-growth, decay and disintegration, and these three processes go on simultaneously.

In consequence of the dying of the cells, there is a continuous accumulation of dead materials that need to be disposed of by some process or processes.

We believe a majority of the common complaints of mankind are due to autotoxation caused by retention in the body of such dead and effete material.

The microbe, acting as a scavenger, and finding an abundance of food, and a suitable nidus, takes up his abode and begins to proliferate.

In thus doing he also produces a toxin, the result of his own life work.

This toxin acts as a poison to the cells of the host, debilitating them; thus preparing them for a future break-down.

To paraphrase scripture:

"Where the carron is, there will the vultures meet."

It is well to destroy the nasty vulture, but it is better not to have foul carron infect the air.

It is good policy to swat the fly, but much better not to have a breeding place for him.

The bed-bug has likewise a work to perform, and it is in a filthy environment. He is like the fly, an infecting animal.

Likewise the mosquito, also the rat, etc.

Destroy the mosquitoe's home, as a breed-

ing place, and there will be no need of screens.

Having submitted the above propositions we will proceed to elaborate in detail.

If the above propositions are correct, it follows, as a natural sequence, *that in order for a disease-producing organism to infect another, the latter must be in a receptive condition.*

To illustrate:

FISH CANCER.

Dr. H. H. Gaylord, of Buffalo, director of the State Institute for the Study of Malignant Diseases, has just made to Governor Glynn the report of a special study which reveals the fact that fish in the State hatcheries, in common with those in most of the other cultural stations where species of the salmon family, including trout, are kept for breeding purposes, are more or less infected with cancerous disease.

He has reached the conclusion that what is known as "fill disease" or endemic goitre is really a malignant growth, and his investigations have convinced him that the affection is caused by a specific micro-organism.

It has been successfully transmitted to dogs and rats, but it would appear that he has never succeeded in transplanting the tumors from one fish to another; nor, in his experience, has the disease even been transmitted directly from infected to healthy specimens.

Certain specimens have been found to possess an almost complete resistance to the disease, while spontaneous recovery occurs in a considerable proportion of cases.

The slums of our cities, and their foul, unsanitary tenements, are prolific breeding places and hot beds for phthisis; our prisons and the general vile treatment their inmates receive, are likewise prolific sources of this disease.

Upon examination of the death records of thirteen prisons, located in different parts of the country, we find the deaths from phthisis to be 95.9 per cent.

Doubtless tuberculous deposits could be found in remaining 4.1 per cent.

A friend of the family whose home was in the North, being afflicted with tuberculosis, moved South where she improved very much.

So much so that she determined to return to the cold North. She had not been back long before she had a relapse and renewed hemorrhage.

Returning South, the hemorrhages ceased and her general health improved, so much so, that she was enabled to do her own work.

We could cite many cases in our own practice of fifty years, showing recovery from an advanced stage of tuberculosis.

And this condition was not obtained principally by drug-medication, but more largely by hygiene and alimentation, together with open-air exercise.

We believe that tuberculosis, and the tubercle bacilli, never becomes implanted in a healthy system.

There is always an abnormal anterior condition that should receive our attention.

By sufficiently improving the nutrition, we lift the patient above and beyond the plane on which the bacillus flourishes.

Solis Cohen says:

"To make our conception of disease sufficiently comprehensive, we must include other elements than microbes, and the changes in cellular structure or chemic constitution of solids and fluids brought about by its activities. * * *

That condition which makes the human tissues a *'receptive soil,' a favorable culture medium."*

This departure from the normal, is of itself a disease.

It is this condition, which skilfully treated, brings about a secession of disease."

Dr. Weaver says:

"We believe this cachexia, this predisposition, which may be inherited or acquired, is a defective nutrition, superinduced by a want of vital energy, which has its correrative in the histologic expression in the place of normal tissue; elements of lowered vitality." * * *

"Therefore, we conclude with Cohen, that when, in the course of ordinary wear and tear, or following inflammation or injury, or from any cause, or combination of causes, degraded tissue elements have been produced, it is highly probable that microbes, finding therein favorable soil, modify by

their activity and life changes, the further activity of the disease."

In closing, we cannot refrain from expressing a thought:

At the present day, among criminologists, it is believed that most crimes are the result of contagion and environment. Hence acquired diseases.

In this respect they may be classed as a disease.

Now what do we do with a malignant disease infected person?

Why, we isolate such in order that they may not contaminate society.

With regard to the criminal!

Would it not be the part of wisdom to cure, if possible, the breakers of our laws, instead of graduating them as perfected criminals in our unsanitary prisons; then turning them loose to further infect society?

MANUFACTURERS TO BE NOTIFIED THAT GUARANTIES AND SERIAL NUMBERS ARE AT AN END MAY 1, 1915.—The Department of Agriculture is sending individual official notices to over 58,000 manufacturers that on May 1, 1915, their guaranties filed under the food and drugs regulations will be stricken from the files and that thereafter the serial numbers assigned to such guaranties must not be used on the label or package of any food or drug. This action is in accordance with the regulations adopted on May 5, 1914, by the Secretaries of the Treasury, Agriculture and Commerce, which abolish the use of the guaranty legend and serial number on foods and drugs. The ground for this action was that the legend "Guaranteed by (name of guarantor) under the Food and Drugs Act, June 30, 1906," was understood by many consumers to mean that the Federal Government had passed upon and certified the excellence of the article so labeled, whereas the legend and serial number were merely a guaranty on the part of the manufacturer to his dealer that the manufacturer would assume full legal responsibility for his goods.

In the meantime from the records it appears that 58,816 manufacturers have filed guaranties and obtained serial numbers, the last number issued being 58,816.

The notice advises manufacturers that after May 1, 1915, guaranties should not appear on the label or package but should be incorporated in or attached to the bill of sale, invoice, bill of lading, or other schedule giving the names and quantities of the articles. The guaranty may be printed or stamped on the invoice, and if it is signed in accordance with the new regulations and refers specifically to the goods listed in the invoice or document it covers, it need not contain a detailed description or schedule of the articles.

Manufacturers who are asking permission to file guaranties and obtain serial numbers are being advised that they should attach their guaranty to their invoices and not seek to use the legend or serial number on their labels, as the guaranty and serial number will be withdrawn within a year.

What the Scandinavians have contributed to America will be described in the June *Century* in a paper by the authority on Immigration, Professor Edward A. Ross, who, in a series in that magazine, has been taking up the various nationalities that make the American race. As Professor Ross is a member of the faculty of the University of Wisconsin, he is probably even more familiar with the Scandinavians, who preponderate in that part of the country, than with any other nationality.

The campaign to raise funds for the Mt. St. Rose Hospital at St. Louis, ended in the subscription exceeding $150,000. This hospital is devoted exclusively to the care of tuberculosis patients in all stages. The executive committee in charge of the campaign announced that all expenses of the undertaking would be borne by the members of the committee and all money collected would be presented to the hospital. It is usual in such campaigns to deduct the expenses from the amount collected and therefore the action of the executive committee in this campaign has received unstinted praise. The expenses will amount to about $9,000.

REVIEW OF THE DIAGNOSIS OF HERNIA.

By J. J. LINK, M. D., of St. Louis.

To the experienced, the diagnosis of hernia is apparently easy. It is a fact, nevertheless, that many mistakes are being made. I hope, therefore, it is not amiss to review a few facts in connection with hernial diagnosis, particularly with reference to umbilical, inguinal and femoral hernias.

I desire especially to refer to umbilical hernia in that it is barely possible to mistake a very large hernia of the umbilicus for a pendulous abdomen. Both varieties are usually found in women, but, the umbilical is much the more frequent and may be differentiated by its saccular form with its lobulations and their racemoid omentum, which usually can be distinctly made out by palpation through the skin; also by the fact that the umbilical hernia has a neck at the base which can be determined even in the most corpulent individual. On the other hand the pendulous abdomen is a condition in which the whole anterior abdominal wall has pouched without any base, neck, nor protrusion.

In the inguinal hernia, we are frequently called upon to differentiate between hydrocele and varicocele as well as femoral hernia. The examiner will do well to always find the neck of the hernia; from this, one will learn from what region and through what aperature the protrusion passes. Having determined this, one may at once make the diagnosis—determining whether it is a femoral or inguinal hernia—by remembering that the neck of a femoral hernia is located *below* the *Poupart's* ligament and to the *outer side* of the *spine* of the *pubes* and that the neck of the inguinal hernia is *above* Poupart's ligament and to the *inner side* of the pubic spine.

The knowledge of differentiation between inguinal and femoral hernia is most important when it is necessary to reduce either, especially so when the hernia is strangulated. Because of the fact that femoral hernia passes upward over Poupart's ligament after it has come through the saphenous opening, this protrusion has many times been taken for inguinal hernia. And many failures and injuries have been caused in an attempted reduction in strangulated femoral hernia by reason of mistaken diagnosis.

Varicocele is differentiated from inguinal hernia in that it does not give an impulse on coughing; it disappears when the patient assumes the horizontal position and the enlargement in the scrotum appears upon resumption of the erect position, but the enlargement takes place from below up, even if the external ring be compressed by means of the hand or finger; it gives a wormy sensation to the finger when palpated. The scrotal hernia fills the sack from above; it gives an impulse on coughing, reduces with a gurgle, and does not reappear when the inguinal rings are compressed.

Hydrocele is differentiated by its translucence to light; it is fluctuating, and does not reduce, excepting in some rare cases in early life; namely, in congenital hydrocele in which the opening into the peritoneal cavity has not been entirely obliterated.

It is necessary for those who operate upon hernia, to be sure beyond a doubt, as to whether an inguinal hernia is congenital or acquired. Congenital hernia does not mean that the individual was born with the hernia, but that the tunica vaginalis of the cord was not obliterated before birth, and, so long as this condition remains, a protrusion into the tunica may take place; therefore, a congenital hernia may appear at any time during life. In congenital hernia the tunica is the sack, while in the acquired inguinal hernia the sack must be formed from a fold of the peritoneum.

Obviously, the acquired hernia must develop gradually while the congenital hernia comes on rapidly, and passes down to the scrotum at once; while in the acquired it will take months or even years before it becomes a scrotal hernia.

A *cecum* without a meso-cecum, may become *part of a herinal sac* of an acquired hernia; in the case of an inguinal hernia in which the internal ring is quite large, the

bladder may become *part of the wall of the sac* of a hernia. When operating the surgeon should exercise the greatest care in separating the sac from the environment, that he may not tear or cut into the cecum or bladder. The cecum may be recognized by its contained gases, it being tympanitic, and this portion of the sac being thicker than the peritoneal, care should be taken in making the incision into the thinner portion, one may then observe the stria of the cecum on the inside of the sac. In case of the bladder one may readily recognize it by passing a sound into the organ, and by the fact that the hernial protrusion increases and decreases as the bladder is filled and emptied.

Of most grave importance is the recognition of strangulated hernia; especially so if intestines be involved. It often means death to the patient if the condition is not relieved within twenty-four hours. A strangulated hernia gives *no* impulse on coughing; it comes on abruptly, and causes most severe abdominal pain and distention, vomiting and constipation. The vomiting becomes stercoraceous, but only toward the last, and one is not justified in waiting for the stercoraceous vomiting to complete the diagnosis. Strangulated hernia has been mistaken for appendicitis when on the right side; it may be differentiated by the fact that appendicitis starts with a rise of temperature and most severe pain in the appendicular region; there are signs of inflammatory condition, the patient lies quiet, generally with limbs flexed, fearful of being touched about the right iliac region, often warding off the examiner's hands. The patient with strangulated hernia will move about without pain or complaint, he will get up, stand and walk, often for distances; there is no rise in the temperature nor signs of inflammation in the beginning; and there will be the protrusion in one of the hernial regions. Peritonitis may be similarly differentiated.

Failures in the reduction of strangulated hernia, are due to lack of knowledge of the *course and position of the hernia,* and adhesions.

INDIANS AND TUBERCULOSIS.--Dr. John N. Alley, Superintendent of the United States Sanatorium for Indians at Fort Lapwai, Idaho, says he is convinced, after a study of the cause of death among Nez Perces Indians for the last 10 years,that 90 per cent of all the deaths are due directly or indirectly to tuberculosis. In the hundred years that have elapsed since the historic expedition of Lewis and Clarke to the Northwest, the Nez Perces tribe has diminished from 8,000 to 1,300. The present tuberculosis death rate is about 40 per thousand living or two and one-half times the rate in the United States as a whole. Dr. Alley traces the cause of the decimation to the change in the mode of living of the Indians from the open air life of the plains to the sedentary, settled life of the reservation. The latter has brought with it the danger of house infection which was automatically eliminated in the earlier days. "Ventilation," says Dr. Alley, "is completely foreign to an Indian's nature. It is with great difficulty that you can get them to pay any heed to this important part of sanitation. I have known twenty or thirty to gather in a small room where an advanced case of tuberculosis has been housed for months, and to close all the doors and windows, even plugging up the keyholes."

In a recent report of the office of Indian affairs, Commissioner Sells points out that there are approximately 25,000 Indians in the United States suffering from tuberculosis, and that the available government facilities for their care will not exceed 300 beds.

In surgical treatment when to remove a drain is almost as important a question as when to use one.

Urinary leakage, even for a few weeks after ureterorrhaphy or ureteroanastomosis does not necessarily mean failure. It may cease spontaneously.

SEXUAL INSTRUCTION: FACTS VERSUS FANCIES.

By ALBERT E. MOWRY, M. D., Instructor in Genito-Urinary Surgery, Northwestern University Medical School; Attending Genito-Urinary Surgeon to Provident Hospital, Chicago, Ill.

At the present time one of the periodical waves of reform has hit a subject that is in need of changes and a movement is well under way backed by the right forces. There has never been a chance for doing so much good as the present in matters relating to sexual instruction of children as well as adults.

Sexual ignorance and folly have caused untold suffering. It has been a subject sadly neglected and miserably handled. The matter must be approached cautiously and carefully, for mistakes can defeat our best intentions.

The study of the mind in sexual matters is a complexity of undercurrents that are quiet but they are the currents that we must take into consideration. That is why a careful analysis must be entered in a study of this subject.

Reformers are going to look to physicians of standing when it comes to the real points at issue and we must give advice and instruction that are going to stand the test and do the most good.

First of all, who is the proper person to give boys advice?

The first thought would indicate that the boy's father would be the proper person to instill this knowledge, but in my opinion this is a bad mistake as a rule. A father reads up and calls his son into a private spot and says, "Son, I have some things to say," and says them. The boy will dutifully say, "Yes, father, I see," but while father and son have been in this consultation there usually arises in the son a feeling of a peculiar barrier between him and his father that never existed before, and a feeling possesses the son as well as the father that it might have been better if this meeting had never occurred.

A father may be skilled and have some secret regarding his trade that he imparts to his boy, and the boy will grasp it with a feeling of pride, but when the father undertakes to explain anything in a sexual line there is a feeling of indifference and disgust or resentment that comes to the boy and in future the real confidence between father and son is modified. This is especially true if the boy has not had sexual sensations, and and if the boy has had sexual sensations and things have already happened in the wrong way regarding the sexual life, it is the old story of closing the door after the horse has departed.

There are exceptions to all rules, but in the main the above facts are true and must be taken into consideration.

Rome was not built in a minute, neither can this problem of sex instruction and information be carefully executed without a proper analysis. Some things we might say to boys might cause indifference and disgust; other things might touch the right chord and be of great benefit.

There is a terrible amount of damage wrought by ignorance of sexual life. Perversion in many ways is much more frequent than imagined. Where does perversion begin and end? I have seen it many times in small children in one form or another. I know many forms exist, and the old question of where does insanity begin finds a counterpart in the question—where does perversion begin? I have seen children almost babies scratch the rectum or sexual organs and smell of the fingers with an evident satisfaction.

The same is too often true of children sleeping in the same bed. At an early age almost unbelievable practices are indulged in. I know of little boys who apparently take great pleasure in playing with the vulvas of little girls and who relish the feminine odor already present.

I have also observed another characteristic that I have never been able to properly fathom, but it is the truth nevertheless. Many little girls and boys from five to fourteen attempt to cohabit. These little girls who begin sexual indulgence early, when the time for real sexual life arrives often

become nymphomaniacs. Parents cannot watch the associations and secret actions of little children too closely and many a parent takes altogether too much for granted.

With such conditions previous to puberty what can we expect when a boy finds an entirely new functional activity; he has no real idea of what it means and he usually picks up piecemeal bad ideas of procedure. These changed conditions make him different in many ways. The wrong mental force creates bad conditions and often poor health. He becomes a prey to quacks or to morbid conditions.

The school in my opinion is the only place where sexual instruction will set in a firm foundation before sexual activity has developed, and sexual derangements often follow so closely after sexual activities arrive that advice, lectures and pamphlets find damaged conditions already present that are extremely hard to correct.

Many boys with excessive night losses and other undesirable conditions, read and reread, consult and listen, but the more they read the more they feel their weakness and their helplessness to control conditions. It is the old story of an ounce of prevention being worth many pounds of cure.

First, if boys get instruction before puberty it must be accomplished by easy tact, as boys at this age hardly comprehend the real meaning and the subject must be handled tactfully, but this is the time our advice and best efforts must count.

Make the statements clear and concise; tell the boys venereal diseases are easily contracted, almost impossible to get rid of and often cause much real suffering and probably death. Tell them to show themselves masters by not taking their new sensations and feelings in the wrong way, but to play much in the air and sunshine; tell them to shun lewd pictures and stories as in the end they cannot fail to do damage in one way or the other; tell them not to attempt liberties with good sweet girls, as such conditions often cause lives of shame, suffering, and make bad women out of what would eventually make good sweet wives and mothers.

Accentuate the fact that a man to be great must master his mind in many directions and that the above point is as important as honesty and square dealing.

Regarding girls, mothers, I believe, can as a rule talk to daughters without the estranging effect noted between father and son, but a school instruction given properly will help much. The one thing to impress on girls is that well known fact that if they allow any boy or man to assume any such liberty as putting their hands under their clothes, that they forfeit the respect of the boy or man attempting such liberties and occasionally turn respect to disgust or gossip.

Tell them that thousands and thousands of women die and suffer every year from wrong doing, which wrong doing would never have existed if they had not made just a little start in the wrong direction.

The proper time for instruction I believe is in the first year of high school. The subject can be made acceptable and not spectacular. If it is not desired to have a physician talk to children direct, the above facts can be printed, one for boys and one for girls, and put on cards and distributed by the teacher in the first year of high school or last year of grammar school.

Regarding social conditions in general: Segregated vice with or without supervision is a pitfall. It creates wrong conditions; it increases venereal diseases, drunkenness and perversions, as facts show. The partial suppression of the red light districts in Chicago has greatly decreased new cases of venereal diseases, as actual figures will show. Where those houses are open with girls with fancy silk wrappers and hosiery there is much more venery than when such is not the case. The pitiful wail is heard, "What will become of these women? They will be driven into the residence districts much to our discomfort." Probably true, but if there is no glowing red light district, girls who start that life would be much decreased in number and eventually all bad conditions much bettered.

On Saturday nights a boy will only too easily be induced to visit the sights if the sights are easily available and the end results too often are drunkenness, disease and crime.

Moreover, these is another side too often

overlooked. Many a good girl will spend her Saturday nights alone, while a boy who would in all probability spend the evening with her is tempted and visits the spectacular licentiousness instead. What may be the end results so far as the good girl is concerned? A woman usually craves affection and love. When the young man who would probably visit her if it was not for the red light attractions fails to show up on several Saturday nights, the girl becomes dissatisfied. Some girl friend says, "Come to the dance hall with me; there are lots of nice boys who will like you and show you a good time." The girl in one of her uncertain moments accepts and finds the so-called affection along with the music, bright lights and liquor.

The rest is much more often a fact than we care to realize. A woman demands affection and ofttimes if virtue is to be the price for this so-called affection it is more often paid than we realize. This condition of affairs reaches all nationalities and racial traditions have been shattered.

Give boys and girls a talk on sexual life right to the point at a time just before expected puberty; no fairy tales or sweet scented stories of reproduction, but call a spade a spade without vulgarity. Let this all be done at school by a physician if possible. Sexual inconsistencies and ignorance have caused untold misery.

Let us determine who shall tell the boy, when he shall tell the boy and what he shall tell the boy, for the first two are equally important with the last.

As matters have stood in the past most instruction given boys has been done in churches and in Y. M. C. A. lectures and pamphlets. These boys are told that nocturnal seminal emissions once a week or so is nature's way of siphoning off the semen and are necessary and natural. I do not agree at all with most teachers in this point for they fail to demonstrate any such conditions in animals and they have semen, testicles, and seminal vesicles, but for the sake of argument let's presume such an emission once a week in a young man is a necessity.

A boy gets his mind set on the thought of once a week and possibly once in two weeks. He has an emission tonight and possibly one the next night. He figures silently that his case is not a natural case. His worry makes things still worse and makes the emissions more frequent, for a little thought, "I am afraid I might have an emission tonight or the thought I must not think of anything," is almost sure to create mental impulses that make bad matters worse.

I think I see more cases where well-meant and yet ill-advised instruction has been given than where no instruction at all has been forthcoming. In other words, strike the undercurrents in sexual instruction and you will do much good. Attempt to fight evils as first impulse dictates and you will do little good and possibly harm.

In conclusion fasten one fact firmly in your mind, moralizing has been a fact since time began. The ten commandments tell the story plainly and in unmistakable terms, but at all times immorality has been the despair of the churches. Moralizing will never settle the doings and shortcomings of boys and girls; they must settle these themselves.

We must strive to put a question mark in their minds in such a manner and form that it will be answered rightly. I candidly believe cards given to school boys and girls at the right time with the information along lines I have briefly outlined will do the work better than any other method.

The boys' cards would contain hardly one hundred words all told, while the girls' cards would probably contain but fifty, but the good plain truth to the point would be a means of setting in motion mental question marks that would in many cases be answered by the thought, "I will do right."

In abdominal surgery the field should be bloodless before closing the parietes. Don't depend upon it that "that little bleeding will stop," if a little extra pains with sutures or ligatures will make it stop. Sometimes "that little bleeding doesn't stop, but causes an intraperitoneal hematoma or an alarming secondary hemorrhage.

MODERN DIAGNOSIS AND TREATMENT OF CHANCROIDS.

By Moses Scholtz, M. D., Cincinnati, Ohio.

The presentation of so trite a subject as Chanchroid before a medical audience would seem to call for an apology. My apology will be, this very triteness. The medical subject that is considered trite and common is very apt to be slighted in favor of more fortunate members of the pathological family. As a consequence, it lags behind in theoretical research and clinical application of modern ideas. If the claim of a disease on the attention is to be measured by the amount of suffering it inflicts on its victims, or the extent to which its theoretical and clinical aspects are worked out, Chancroid certainly does not get its proper share of attention. The average case of Chancroid induces a good deal more of disability than Gonorrhea. At the same time, neither theoretically nor clinically can Chancroid be regarded as a closed chapter in medicine.

The utmost confusion and divergence of opinions prevails among clinical workers on the clinical importance and treatment of Chancroid. Thus: Stellwagon (1) does not mention Chancroid in his text-book on Dermatology, evidently refusing to regard Chancroid as a skin disease,—an extremely illogical and untenable attitude, to my mind. Guiteras (2) in his latest large text-book on Urology, dismisses the diagnosis of Chancroid in eight lines and its treatment in twenty.

On the other hand, as conservative and competent a dermatologist as the late James Nevine Hyde (3) states that many of the consequences of Chancroid are much more severe and some of them even more malignant than the average of Syphilitic sequels (and even than some forms of other diseases usually classed as malignant).

Contagium of Chancroid is not yet definitely established. There are two contending views on the subject. According to one, Chancroid is due to common Pyogenic germs of unusual virulence. The other view, held possibly by the majority of observers, upholds the specific character of the Streptobacillus, described by Ducrey-Unna. The bacillus is not easily demonstrable in smears from the lesions, as its number is extremely small compared with the number of other associating bacteria. It appears as short and dumbell-shaped, often in groups and chains. It stains with boric methylene blue, gentian or methyl violet and fuchsin, and is decolorized by the gram method. It does not grow on usual artificial media; but Lincoln Davis (4), of the Massassachusetts General Hospital, has succeeded in cultivating it on fresh blood or in media containing one third of its volume of blood.

The clinical picture of Chancroid is too well known to bear a repetition. I would emphasize only one feature, pointed out by White and Martin (5), which is of paramount importance in the treatment and prognosis of Chancroid. This is the fact that Chancroidal infiltration extends considerably beyond the borders of the ulcers and invades papillae which are still covered with apparently healthy epithelium. In other words, Chancroid is always larger than it appears to be on the surface and any cauterization to be effective, must extend considerably beyond the borders of the visible sore.

The differential diagnosis of Chancroid, clinically, is simple enough in typical cases, but in a good many others, extremely difficult and sometimes impossible without bacteriological data. Quite a number of conditions may simulate or be associated with Chancroid.

One of the most common sources of confusion is presented by Herpes Progenitalis, particularly so when infected with Pyogenic germs. Sudden breaking out of one or a few regular, round-shaped, sharply defined deeply punched out sores without painful buboes, would speak for Herpes. The possibility of Chancroidal infection superadded on to Herpes should also be considered.

Infected Balanoposthitis may present a rough resemblance to Chancroid, but the

*Reprinted by request.

wide area of erosions without sharply defined borders, the extremely superficial character and rapid healing up after mildly antiseptic and astringent applications clear up the diagnosis.

The most important feature of the differentiation is that from Syphilitic Chancre. Typical cases do not present any difficulties of recognition. Typical Chancroid will show single or multiple sharply defined ulcers with undermined borders, whitish necrotic bottom, profuse purulent secretion and tender bubo. Typical Chancre will present an infiltrated plateau of ill-defined borders with or without ulceration, greasy, waxy-looking bottom secreting scant serous discharge and indolent bubo. But there is a number of cases of mixed infection that present an infinite variety of combinations of the clinical features of both. No reliance can be placed on the length of incubation as it is given by the patients, since the very beginning of the sore, especially of the hard chancre is commonly overlooked. Most misleading and preplexing these mixed types are in the early stage. Due to the difference in length of periods of incubations, Chancroid Virus is the first one to give clinical manifestations, and the sore presents an appearance of pure Chancroid for a week or two, until the incubation of Syphilitic inoculation expires and the new features are added to the clinical picture.

Fortunately we possess now a rapid method of microscopic identification of living Spirocheta in dark ground illuminator or the staining method of Spirocheta Pallida, by India Ink method, in Giemsa's stain. Giemsa's stain is much to be preferred, since it is very simple and quick and gives much more distinct and positive information than negative staining by India Ink.

Not as common as initial Chancre, yet of great clinical importance, as a possible source of confusion with Chancroid, are Syphilitic flat condylomata, especially pus-infected and ulcerated cutaneous gummata of the penis.

As rare, but always concrete possibilities, should be mentioned Epithelioma and Tubercular Ulcer of the penis. Either of these affections has well defined characteristics that can be readily recognized if only their possibilities are kept in mind.

Among the complications of Chancroid, those of clinical interest are Phimosis, Bubo and Phagedena.

Phimosis is usually the result of carelessness or improper handling of the case, and offers difficulties only in the presence of Chancroid way up under the prepuce.

Bubo is a most frequent complication of Chancroid. Clinically, it seems to be favored by the lack of drainage and retention of the secretion under crusts, but the exact etiology of it is not known. Contrary to expectations, the majority of the observers have failed to find any microbes under the microscope, in the cultures or in the experimental inoculations. On the strength of this, a hypothesis has been advanced that the bubo is due to the absorption of the toxins from the site of the Chancroid. Quite a number of Chancroidal Buboes undergo a Chancroid (or Phagedenic) degeneration and merge into the third complication of Phagedena.

Phagedena is commonly accepted as due to the low vitality and general cachetic condition—but this explanation does not seem to cover all cases. In seventeen cases of Phagedenic Chancroid that came under my observation, only a (very decided) minority of them showed any evidence of general weakness or debility, the rest of them were of such splendid physique and robust appearance, that another factor had to be held responsible for it, possibly an extreme virulence of the Streptobacilli.

The treatment of Chancroid is wholly empirical and essentially tentative. The endless variety of drugs suggested is a sufficient evidence that none of them is specific. Generally there are two methods of treatment in vogue, frequently used jointly, supplementing each other.

The first is the conservative method of cleansing and applying various antiseptic drugs. The second more active is the cauterizing method.

In mild cases, the conservative method is sufficient. In severe cases, cauterization is indispensable Wet dressings are to be preferred in all cases, the objection to dry dressings being that powders tend to cake

and through retention of the secretion may promote formation of a bubo. The selection of an antiseptic solution is not of material importance. Their action is superficial at the best, and their main function is cleansing of the ulcer. Among antiseptic powders, none has any strong germicide value and they are used more as a protective coating. Mention should be made of the old standby, Iodoform. While it is far from specific, and is not by itself a germicidal agent, its surgical value through the peculiar ability to decompose and to split off free iodine in the presence of pus, has been endorsed by all clinical workers. Yet due to its intolerable odor, its use is necessarily limited to very exceptional cases. Numerous substitutes of iodoform posses the advantage of external elegance, but though theoretically containing high percentage of iodine—as aristol-45 per cent., iodol-89 per cent., are clinically almost inert and not as hygroscopic.

The most active part of the treatment of Chancroid belongs to cauterizing. Cauterizing can be effected through Paquelin, or galvanic cautery or various chemicals. For major surgical purposes, Paquelin or galvanic cautery is undoubtedly to be preferred as deeper and more thorough going; but for a comparatively superficial affection as Chancroid, which in most cases is skin deep, it is questionable whether chemicals and particularly fluid chemicals are not more suitable.

Another reason why chemicals-cauterizing in Chancroid seem to me preferable, is that they do not call to such extent for anaesthesia, and thus save us this valuable assistance of a pain as guide in judging the intensity of cauterization and preventing disfiguring scars.

Among various tested chemicals, the most serviceable in my experience has proved to be fuming nitric acid. It is of sufficient but not excessive penetration, spreads easily along the surface, and the pains from it, though intense, subside rapidly. The second best is pure carbolic acid, the advantage of using which, is almost complete absence of pain, and the disadvantage, insufficient penetration. Silver Nitrate has to be mentioned, only to be condemned; not only in weaker solutions, but even in solid pencil form. It is extremely superficial in action, and produces an impervious film or layer of coagulated albuminous necrotized masses; thus, while being wholly ineffective as cauterizing, it can do actual harm, by obstructing the free flow of secretion. The same holds good about Copper Sulphate—so popular among the laity as a blue stone pencil. Trae Iodi—though too weak to be of any cauterizing value, is extremely serviceable for antiseptic and cleansing purposes, particularly so in sinuous and hidden recesses of chancroidal buboes. Trichloracetic acid, a most admirable cauterizing agent in various dermatological conditions, proved to be a disappointment.

Also disappointing in Phagedenic Chancroid, even in the highest concentration, were basic fuchsin, lately highly recommended as a surgical antiseptic, and chemically allied to it, Scarlet red ointment. They can be of valuable assistance though, in the healing granulating stage. One more chemical was tested,—concentrated Lactic acid, which proved too weak for cauterizing purposes.

Two novel features, or at least not mentioned in any text-book, are being suggested in this paper for the treatment of Chancroid. First: the use of X-Rays, which proved to be well-nigh specific. Evidently so powerful a therapeutic agent should not be used for a mild average case, but reserved only for the rebellious and serpiginous variety. In all, eleven cases were treated by X-Ray. All cases were of the Phagedenic variety, which resisted all kinds of cauterization and antiseptic applications for more than two or three months. The cases have been rayed by Dr. Sidney Lange, and all of them have shown rapid improvement, except one. This particular case not only did not improve, but actually got worse. The case eventually went to slow recovery under persistent bichloride applications. Seven cases were complicated with phagedenic buboes, one of the cases bilateral. In six cases, two X-Ray-exposures were necessary at one week's interval. In three cases one exposure was sufficient to bring about recovery. The X-Ray exposures were as follows:

Strength of the current, 2 Miliamperes.

Distance from the tube, 6 inches.

Duration of treatment, 10 minutes.

Exposure amounted to so-called half-erythema dose.

Immediately after raying, ulcers did not show any visible changes in appearance, but after five or six days, the accumulated effect could be seen in steadily drying up and fading of the ulcers. It took from two to three weeks for a complete recovery in all cases. The rationale of the action of X-Rays on Chancroid is not clear, as rays are known not to possess any germicide power, and it depends probably upon their peculiar property to attack all pathological formations and tissues in preference to healthy parts.

The second method recommended, is the use of radiant heat. Therapeutic use of dry heat has been put on a scientific basis by August Bier (6) in his teaching on Hyperemia treatment and has been since confirmed in numberless clinical observations. The first attempt in America to apply dry heat for the treatment of Chancroid was made by E. Wood Ruggles (7) of Rochester, who has constructed a special hot air chamber for penis, and kept up continuous exposure to hot air by connecting the appliance with a gas pipe. The starting point of his experiment was the observation that Chancroid Streptobacillus is of very low resistance and is killed by as low as 122° F. Four cases of Phagedenic Chancroid treated by him all showed splendid improvement. With the idea of simplifying this elaborate procedure, possible only in the hospital, I have used instead of the hot air, method, a radiant heat furnished by fifty candlepower therapeutic leucodescent lamp, giving daily exposures, ten to twenty minutes, at a distance of six to twelve inches, 120-1400—just about the limit tolerated by the average individual. The great physiotherapeutist Winternitz (8) is responsible for a statement, that radiant heat of 120° equals penetration of hot air to 350°, and this fact probably accounts for the profound reaction effected by even so short exposures to the lamp. The test of the method was started a short while ago, and only a few cases have been treated by it, with uniformly good results. One case was particularly illustrative of the great therapeutic power possessed by radiant heat. A. N., æt. 26, a strongly built, but pale looking man, came with two coffee-bean-sized chancroids. In spite of vigorous cauterizing and continuous wet applications of strong antiseptics, the ulcers grew in size until they ran together, and formed one big ulcer the size of a cross-section of a large lemon. Because of the unusually scant secretion, elevated borders and bilateral indolent buboes, which according to the patient's statement, have dated since the year before, when he also had a venereal sore, mixed infection was suspected, and salvarsan was administered intravenously. The general appearance of the patient improved, but the ulcer showed no improvement. Three weeks later, another intravenous injection of salvarsan was given, again no local improvement. After two months of futile attempts to control the ulcer, daily exposures of leucodescent lamp were resorted to, following with scarlet-red salve dressing. A healthy reaction asserted itself after the very first exposure, and after ten exposures the ulcer had a healthy granulating surface (rapidly undergoing epithelization). The patient, considering himself well-nigh recovered, resumed his work, and discontinued the lamp treatment, continuing the use of the scarlet-red salve—but the ulcers opened up again in spots, and he had to come back for treatment. Four more exposures were given, and the ulcer healed up permanently.

It is of great interest to watch the striking difference between the effects of the X-Ray and Radiant Heat on the appearance of the ulcers. After the X-Ray, no vascular changes could be noticed around and on base of the ulcers—the chancroid was seen drying up and slowly disappearing on a practically unaltered underground—a dry recovery, as it were. After lamp exposure, the periphery of the ulcer was intensely hyperemic and the surface showed a dry glazed film of coagulated serum, but it was followed later by a profuse discharge. In other words, the X-Ray acted as an inhibiting agent, inducing involution of the lesions without acting on the underlying base. The radiant heat, while exercising a germicidal action due to high temperature, had its most pronounced effect in creating violent local reactive inflam-

mation to throw off the invading pathological agent. The administration of radiant heat with a leucodescent lamp is so simple and safe that it can be used in all and any cases. There is practically no contraindication to it save expenditure of time: I feel that these two methods, X-Ray and radiant heat can render most valuable assistance in the treatment of Chancroid and will control the most rebellious and sluggish cases.

The complications of Chancroid are to be treated along general surgical principles. Phimosis, in most of the cases, yields to conservative treatment and should be relieved by a dorsal incision or a complete circumcision only in extreme cases, since the edges of the incision are most likely to become a site of Chancroidal auto-inoculation.

In Buboes, a simple incision of sufficient length to insure free drainage, cauterization with preliminary curetage or without, is usually sufficient.

Complete extirpation of the lymphatic glands seem to me is most objectionable and unjustifiable practice, as usually suppuration in Chancroid is limited to one or two glands, and hardly ever to many of them. Quite a number of cases of Elephantiasis of the penis and scrotum have been reported after radical extirpation of the glands. The function of the lymphatic glands as a physiological filter and barrier to the germs is well established, and it is easy to see that, after radical extirpation of the glands, a man, in case of a fresh infection, would be deprived of his only natural defense.

In conclusion, I wish to emphasize the following points:

1. Chancroid is by far not a closed chapter in medicine, neither theoretically nor clinically, and deserves a greater attention at the hands of the profession than it has been granted heretofore.

2. Exact diagnosis in many cases can be made only after bacteriological search for Spirocheta Pallida and Streptobacillus of Unna Ducrey.

3. Among chemical cauterizing agents, fuming nitric acid and pure carbolic acid are most serviceable; silver nitrate and copper sulphate most objectionable.

4. X-Rays seemingly exert a specific action on Chancroid and should be resorted to in all rebellious and phagedenic cases.

5. Radiant Heat, in the form of therapeutic leucodescent light, acts beneficially on Chancroid, having the double effect of a germicide and powerful physiological stimulus.

6. Phimosis in Chancroid should be treated conservatively and should be relieved surgically in extreme cases only.

7. Radical extirpation of the glands in Chancroidal Bubo is unnecessary and an objectionable procedure.

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THE NUTRIENT ENEMATA.—Those qualified to speak on the matter tell us that the nutrient enemata should not be given with ordinary syringe with a rubber or metal nozzle. Very little absorption takes place when it is thus administered. As a rule all food should be predigested before given by this route. A long rubber tube or catheter should be employed, and it should be passed well up the rectum to the sigmoid flexure. A portion of the fluids thrown into this region will reach the liver, while what little absorption takes place from the lower part of the rectum is lacking in liver digestion. Enemata thrown into the sigmoid flexure is better retained and has a higher degree of absorption.—*Summary.*

BAD AND UNUSUAL.

By D. L. FIELD, M. D., Jeffersonville, Ind.

On December 16th last, a two-year-old child, male, was brought to my office, whose symptoms were soreness of muscles, feverishness, chilly sensations and fretfulness. Thinking his case one of a cold contracted, I prescribed accordingly. In October I attended him one night in an attack of spasmodic croup, which was followed for three or four days by rather severe laryngitis and sore throat. He recovered from it perfectly, and seemed to be in fine health. Before going farther, I will say that he was a great meat-eater—his preference being weinerwurst, of which his parents indulged him excessively. The day following the office prescription, I was called to his home, where upon careful examination I found high temperature nausea and extreme muscular soreness; upon removing clothing found quite a severe case of erysipelas extending from the axilla, half way across the chest. Prescribing: Tinct. Ferri. Chlor., in limited doses, and applying:

Ichthyol. . . . . ℥j
Dist. Ext. Hamamelis. . . . . ℥iij
Mixed and applied freely to the parts.

The temperature and pain were also treated, and the bowels unloaded. In spite of vigorous measures to stay its progress it went steadily on till all the body was involved except from the knees down. I tried hemming it off with iodine and finally used an unguent of equal parts of ichthyol, benzoated oxide of zinc ointment ung. aqua. rosae.

His evening exacerbation of fever would frequently reach 104 degrees. After nearly two weeks the erysipelas had pretty generally faded; but on the 14th day of his illness he developed inflammation of the fauces, glottis, and lastly laryngitis, which proved fatal on the evening of the 15th day. When the erysipelas inflammation subsided in considerable area, I had him bathed with ichthyol soap and hot water, which seemed to give more comfort than from any other means. Such a fierce attack on one so young is rare!

TUBERCULOSIS IN THE ORIENT.—Tuberculosis is one of the most serious public health problems of the Orient. Active organizations to fight this disease have been formed in Japan, the Philippines, India, and Australia. A movement is on foot for a national organization in China and in a number of cities local work has been started. While no accurate figures are available, those who are in position to know claim that consumption takes annually from 500,000 to 1,000,000 lives in China alone. In India the death rate is fully as high, and on account of caste distinctions and native superstitions, the problem of prevention and treatment is peculiarly difficult. The Japanese government has taken a hand officially in the control of tuberculosis, and is co-operating with two well organized private associations. The death rate, while very high, is lower than in China and India. Under the direction of the United States Public Health Service a movement for the prevention of tuberculosis in the Philippines has also been organized.

The National Association for the Study and Prevention of Tuberculosis, with headquarters in New York, although organized especially for work in this country, has been largely instrumental in the establishment of anti-tuberculosis movements in most of the oriental countries, as well as in Africa and in South America.

ABSTRACTS

DYSMENORRHEA.—Clelia Duel Mosher. Stanford University, Cal. (*Journal. A. M. A.*) says that menstruation should be studied just as are the other functions and when normal should cause no pain or disability. The functional dysmenorrhea observed is, she says, congestive in type and produced by: (1) the upright position (Moscati); (2) alteration of the normal type of respiration by disuse of the diaphragm and of the abdominal muscles; (3) the lack of general muscular development; (4) inactivity during the menstrual period; (5) psychic influences. Each of these causes is discussed. She shows how the upright position with the valveless vena cava causes uterine congestion which tends to become exaggerated when the abdominal muscles are lax, when costal breathing is employed and by clothing, etc., which interferes with the action of the respiratory muscles. Mosher has corrected these conditions in many cases by the following method: "All tight clothing having been removed, the woman is placed on her back, on a level surface, in the horizontal position. The knees are flexed and the arms placed at the sides to secure relaxation of the abdominal muscles. One hand is allowed to rest on the abdominal wall without exerting any pressure to serve as an indicator of the amount of movement. The woman is then directed to see how high she can raise the hand by lifting the abdominal wall; then to see how far the hand will be lowered by the voluntary contraction of the abdominal muscles, the importance of this contraction being especially emphasized. This exercise is repeated ten times, night and morning, in a well-ventilated room, preferably while she is still in bed in her night-clothes. She is cautioned to avoid jerky movements and to strive for a smooth, rhythmical raising and lowering of the abdominal wall." The results have been that the pain has been lessened in many cases and wholly removed in a large number. The desirability of more activity is noticed in one of the cases reported; but she cautions against excess, especially in the athletics of college training. A hopeful mental condition is important, and it is unfortunate that pain or disability is so commonly expected. The definition of menstruation should be restated more accurately as Nature's efforts to relieve the undue congestion of the uterus by the causes above mentioned. Mosher's opinion does not represent a supplemental wave of nutrition (Jacobi) but rather a waste of potential energy in the form of blood which might be used in productive work when not required for the development of the embryo. Under normal conditions there should be no more women suffering from disorders of the generative organs than from disturbances of digestion, respiration or of the heart. At present, she says, all the evidence points to the menstrual hemorrhage as a secondary matter more or less fixed by the upright position, and it is unnecessary that it should be of long duration or large in amount.

THE STOMACH TUBE.—George M. Niles, in the *Journal-Record of Medicine,* says that, unfortunately, the prevailing attitude of the public toward the stomach tube is one of repugnance and believes that the reason for this lies in the careless, inexpert, or principally slow technic of those introducing the tube, inflicting upon their patient such needless discomfort that he has not only himself become prejudiced but has helped to spread this repugnance to others.

He claims there are certain contraindications to the employment of the stomach tube which are here given:

1. Pregnancy, especially if advanced beyond the fifth month. The first few months should make no difference, and even the later months, if the patient is accustomed to the tube, and the operator is expert. If, however, the patient has not taken the tube before, the risk is grave.

2. Organic heart disease with broken compensation. To this may be added so-called cardiac neuroses, angina pectoris, real or

pseudo, myocarditis, or any condition where the heart seems decidedly below par.

In some of these conditions, where the cardiac lesion does not appear to be acute, if the patient is quite phlegmatic, or if the operator is expert, risk may be taken, but the physician should realize that it is somewhat of a risk.

3. Aneurysm of any of the large arteries. This condition absolutely contraindicates.

4. Recent hemorrhages of any kind. This heading may include hemorrhage from the stomach, intestines, lungs, bladder, uterus, apoplexies, or hemorrhagic infractions.

A fairly good rule is to permit from ten days to two weeks to elapse, after one of these hemorrhages, before attempting to pass the stomach tube.

5. Advanced pulmonary tuberculosis, or advanced pulmonary emphysema, with bronchitis. The evident condition of the patient in these advanced pathologic states will generally show the inadvisability of attempting to pass a tube.

6. Advanced arteriosclerosis. The tube is generally contraindicated in these cases, whether or not the blood pressure is abnormally high. Even under the most favorable psychic conditions they seldom take the tube kindly, and it is seldom wise to attempt it, especially if the blood pressure is high.

7. Advanced cachexia from any cause. In some of these extremely enfeebled states, any manipulation entailing the slightest shock may turn the scales unfavorably, and the introduction of the tube should not be attempted, unless for very strong reasons.

8. Evidences of erosions of the gastric mucosa, either malignant or non-malignant. In this may be included palpable carcinoma of the stomach or pylorus, accompanied by vomiting of coffee-ground material. These symptoms being present, the introduction of a tube, no matter how carefully performed, may cause serious damage. It is unwise, also, to explore the stomach with a tube when there are strong indications of either a single open ulcer or multiple erosions, even though they be shallow.

9. Acute febrile conditions. All of these may not constitute a bar to the use of the tube, but the operator will find these patients very unresponsive, and, unless great benefit is likely to be accomplished, he will find that more discomfort is inflicted than good accomplished.

10. Those rare and peculiar conditions whereupon the slightest touch of the tube against the epiglottis, the larynx spasmodically closes, and the patient becomes blue. These conditions have not been explained, but they occasionally are in evidence and must be taken into account. This does not mean those nervous, struggling patients who vow they are choking when they are not, and who need only to exercise self-control. It means those who, in "cold blood," try faithfully and intelligently to swallow the tube, but whose whole respiratory machinery automatically closes upon the slightest touch of the tube, while the face becomes livid if the effort is kept up. These individuals simply possess an idiosyncrasy against the tube and it is useless to attempt to force it upon them.

11. Those patients who are violently nauseated at the merest touch of the tube upon the tongue, epiglottis or any part of the fauces or who incline to vomit at the sight or mention of it. These are hypersentitive individuals who really seem in good faith unable to bear the sight, mention or touch of a stomach tube, whose very nature revolts against its use, and who cannot help this feeling. Scarcely any diagnostic information can recompense the physician for the strenuous efforts required to extract a test meal from their frenzied stomachs.

The choice of a tube is quite important. The size for an adult should vary from 18 English or 30 French, to 20 English or 32 French. Anything smaller than this renders the tube rather too small and soft. Larger tubes, up to 24 English, are used by some, and while an ordinary esophagus can accommodate them comfortably, the size is inclined to be alarming. To a fearful patient a tube always looks larger than it really is. It is much easier to use a smaller tube than to quiet his perturbed feelings.

RENAL DIABETES.—S. Strouse and A. H. Beifeld, Chicago (*Journal A. M. A.*) discuss the so-called renal diabetes, possibly traumatic in origin. The general conception that the kidney is practically passive in diabetes has been disputed and they notice the various

statements of authors in regard to this matter. Richter, von Noorden and Weiland, have pointed out that the development of albuminuria may be accompanied with decreased excretion of sugar and, they say, it must be assumed that a relation may exist between glycosuria and the kidney, independent of true metabolic disturbance. The term "renal diabetes" seems to be employed for a condition of glycosuria which has been associated with kidney disease and clinically differentiated from true diabetes by its independence of carbohydrate intake and its clinical course. In studying the cases in the literature one is struck with the many temporary derangements included under this head, and many of the cases cannot be taken as showing the existence of a separate disease. It has been shown, nevertheless, by Salomon that there exists a group of glycosurias even in youth that do not progress to diabetes mellitus. Lepine and Garrod have proposed that the term "renal diabetes" be dropped and the pharse of "glycosuria without hyperglycemia" adopted in its stead. Many temporary derangements are classed as renal diabetes at present, and unless we restrict them to the condition defined in Lepine's and Garrod's definition we are not justified in recognizing a separate disease. Strouse and Beifeld go over the literature of the more thoroughly reported cases and give a full report of one of their own of a healthy young man in whose urine glucose was accidentally discovered during a life-insurance examination. About a year before he had had an injury to his head, but the connection of this to the condition is not clear. There were no symptoms of diabetes mellitus. The blood-sugar was normal and the excretion of dextrose was practically independent of the carbohydrate intake. Under conditions that would intensify the symptoms of true diabetes in a person of his age, 23, he continues in perfect health. The clinical course has not been at all like that of diabetes mellitus, but fully satisfies the diagnosis of renal diabetes or glycosuria without hyperglycemia.

PITUITRIN IN GYNECOLOGY AND OBSTETRICS.—E. E. Padgett, in an interesting review of the use of this drug in the *Indianapolis Medical Journal*, says that theoretically, according to Bassi, the extract of hypophysis acts as an anti-ovarian lessening the action of the ovarion harmones exciting the unstriped muscle fibers and increasing the uterine contractions.

Practically the drug is to be used with utmost discrimination. Bad results will be noted unless strict indications are present for its use. To give such a powerful drug in the face of an impossible delivery from a faulty position, an extremely contracted pelvis or in a threatened uterine rupture simply invites disaster and the fault is with the attendant rather than the drug.

Favorable conditions that should be present: "Secondary uterine inertia which presupposes that the woman is in labor, that the cervix is dilated wholly or in part. Position and presentation normal or relatively so, that the head is engaged or the pelvis large enough to permit of an engagement and that the woman is not exhaustive from a pathological cause and presents fever or pulse rise indicative of sepsis with a lower uterine segment not too much thinned."

Contra-indications. Local conditions which make delivery impossible. Heart and kidney affections and conditions that exist with high blood pressure. Mild eclamptic cases in the hands of Marx have done well under the drug. With the indications present, the conditions favorable and the reasonable dangers eliminated beforehand the drug may be given in good judgment in cases of delayed labor and while it will never dispense with the use of the forceps it will materially lessen its use and abuse.

The drug should be given with an ordinary hypodermic syringe and given intramuscularly, seldom, if ever, intravenously, and the amount varies from 5 to 4 c.c. Its effect is short lived and may be repeated as early as thirty minutes after the first dose. It is supposed, in fact, claimed that the drug has no cumulative effect, but it is well to keep in mind the possibility and thus hesitate before giving it too often in a short space of time, thus helping to prevent tetany of the uterus. In favorable cases its action should be seen in increased uterine contractions in 10 to 20 minutes after injection and in favorable cases delivery may be expected

in 30 to 45 minutes after its effects become noticeable.

The conclusions as to its use in obstetrics have been most carefully tabulated by J. Cliffton Edgar, New York, in a paper read before the American Gynecological Society.

He reported 70 cases from Belview and Manhattan Maternity and private practice, classified as follows:

First and second stages of labor	39
Immediately after labor	19
Caesarean section	6
Induction of abortion	6

From these cases he concludes:

1. Ampules or vaporoles of the drug should be used alone, as in his experience constant results failed when bulk solution was used.

2. There are three reliable proprietary preparations now on the market.

3. For decided action, 4 grammes of the drug was usually called for, although in ordinary cases with little obstruction half this amount was sufficient.

4. As the effect of the drug lasted about 30 minutes often repeated doses were called for.

5. Intramuscular injections were usually satisfactory causing no local pains or reaction and no outward constitutional symptoms were produced in maximum doses.

6. Pituitary extract could be combined with ergot when the action of the former failed and with heart stimulants in shock cases.

7. Pituitary extract has no place in normal obstetrics, its use being limited to cases of primary or secondary inertia; post-partum hemorrhage and Caesarean section, in the last as a substitute for ergot.

8. The drug produced strong intermittent uterine contractions often prolonged for several minutes, but he had never seen true tetanic contractions.

9. The contractions often approached continuous and in the face of resistance might be so considered.

10. Full and even small doses of the drug in the first stage of labor had caused in his cases fatal compression of the fetus; premature separation of the placenta and deep tearing of the cervix.

11. In the first stage or where some obstruction existed in the second stage he gave small tentative doses not with a view to complete delivery by the drug but to bring the head in easy reach of a simple forceps operation.

12. The extract acted promptly and effectively in most of the 39 cases of inertia in the first and second stages of labor. Its actions were more positive in multipara than in primipara. It acted better at full term than in premature cases. Also better in the second than in the first stage and when administered immediately after the spontaneous or artificial rupture of the membranes. In the 18 cases in which the drug had been used immediately after the third stage for post-partum hemorrhage due to inertia his results were disappointing so much so that he considers its action here most unreliable and not as positive as ergot.

13. In Caesarean section he could not observe any advantage in the drug over ergot except its more prompt action.

14. In induction of labor the drug alone failed to initiate contractions but apparently initiated them after the use of gauze, the bougie or the hydrostatic bag. His belief was that the drug strengthened already existing contractions not yet perceptible to patient or physician.

15. For primary inertia in abortion cases his results were disappointing.

16. In atony of the bowel and bladder and as a galactogogue his results were frankly negative.

17. Dangers to mother and child must be kept in mind, namely, death or deep asphyxia of foetus, separation of placenta or uncalled for laceration of cervix or possible rupture of the uterus.

18. Two and probably four of his 39 cases due to inertia were still-born as a result of the use of the drug before complete dilatation, and in three cases there was deep laceration of the cervix requiring suture to control bleeding.

19. As to its use therefore before complete dilatation he considers it about equal to and more dangerous than ergot, because of its uncertainty.

20. The action is most uncertain and one can never predict in a given case either from the kind of inertia; the obstruction to over-

come or the amount of the drug used just how powerfully it will act on the uterus.

21. He has repeatedly observed in cases in which one-half the usual dose was given such powerful uterine contractions that uterine rupture was iminent and anesthesia was resorted to to control contractions.

22. In his opinion the drug should never be administered except where preparation is made for anesthesia and preparations complete for immediate operative delivery in case the emergency arises.

25. Finally, with due regard to its action and possible dangers, pituitary extract is a most valuable addition to the resources for treatment of primary and secondary inertia.

WHOOPING-COUGH.—A. Friedlander and E. A. Wagner, Cincinnati (*Journal A. M. A.*), find that the complement-deviation test is of the very greatest value in the diagnosis of whooping-cough, though Bordet himself, who describes the bacillus, concluded that the complement-fixation was not an early sign. Their technic for the test is described as follows: "A small amount of blood was taken from the patient's ear, finger or toe in small test-tubes or the Wright capillary tubes. This was kept at room temperature or placed in the incubator until coagulation had taken place. Serum was then separated more completely from the clot in the centrifuge. So far in our tests only the fresh active serum has been used. Two drops of the serum were used in each test. Hemolytic System: The Noguchi system was used, because of its extreme delicacy and because of the small amounts of material, especially serum, required. Antigen: This is the most important factor in the test. The Bordet-Gengou bacillus was obtained in pure culture from the laboratories of Parke, Davis & Co. Most of our work was carried on with this culture. Cultures were also obtained from the H. K. Mulford Company and Dr. F. B. Mallory of Boston. The latter culture came from a strain grown at Theobald Smith's laboratory. Subcultures were made on Bordet's medium, ascitic fluid agar and broth serum. The antigen was made from seventy two-hour growths in ascitic fluid agar in the following manner: The colonies which are very tenacious, were washed off the agar with sterile salt water. An emulsion was made, and the bacteria again washed in salt water. From this a standard suspension was made and 0.1 and 0.2 c.c. of this used in the test. Throughout the tests live bacteria were used. Controls: In each test known normal and known positive controls were used. In each series of tests the hemolytic system was tried out in the usual manner, using a water-bath at 37 C. for incubation. After primary incubation for half an hour the amount of amboceptor indicated by the preliminary test was added to our final test-tubes, and the tubes again incubated in the water-bath. Final readings were taken within the following hour." In each case independent readings were taken by the two authors without previous knowledge of the clinical history and the tabulated results are given showing their uniformity of positive reactions in cases of pertussis as compared with other conditions. They call special attention to the need of fresh antigen in the test.

NERVOUS DYSPEPSIA.—In an interesting paper on this subject, Charles Lyman Greene writing in the *St. Paul Medical Journal* says, "as a chief cause of chronic ambulant invalidism, a source of genuine distress to its possesser, a trap for the unwary surgeon, and a constantly recurring problem for the physician, nervous dyspepsia demands broader and more serious therapeutic consideration than it has hitherto received.

By no means a product of modern civilization it has existed throughout the ages, and, under varying names, found its place and record in all periods of medical history.

Nor is it confined to the idle rich, for though more generally prevalent amongst the "well-to-do" it burdens the poor as well and imposes its handicap upon the thinker and the fool alike. The poor, indeed, though in general less often affected than others, are less favorable subjects because of their lack of the means usually found necessary to the successful treatment of this ailment.

Seventy or seventy-five per cent. of all gastric cases encountered by the physician are said to fall under the head of nervous dyspepsia and most of these are relatively

mild though harassingly persistent or recurrent.

The more extreme forms of nervous dyspepsia have ever been a plague to the honest physician, and unceasing source of gain to the charlatan and a typical example of the tendency to vicious circles in disease.

The world's sanatoria and spas are crowded with its victims seeking surcease from tribulation in external and internal medicated baths and dietetic fads which run the gamut from pure starvation, grape or whey cures to raw vegetables or uncooked meats.

No theory is too bizarre, no waters too nauseous, no quack even, sufficiently brazen to repel them.

The psychic state of the nervous dyspeptic is usually deplorable, and he is most suggestible, but nothing is more hopeless in most instances than any effort to combat the faulty and mischievous mental attitude unless a proper pyscho-therapy is backed by mental and physical rest and by feeding.

I should place the disturbances at present included under the term "gastric neuroses" in four etiologic groups:

1. Asthenia universalis congenita, which covers the great majority of cases.

2. Chronic starvation of the acquired type, but usually associated with an underlying congenital asthenia.

3. Pure psycho-neuroses as, for example, in sexual disturbances, but in my experience relatively rare.

4. Cases following shock or due to persistent strain or fatigue, psychic, physical, or both combined, usually trivial or transitory unless engrafted upon the asthenic trunk.

The many cases of more or less persistent or obstinately recurrent gastric symptoms often classed as nervous dyspepsias, but associated with minor dilatations or insufficiencies of the heart like the gastric crises and hyper-secretions of locomotor ataxia, or the manifold disturbances of uremia, represent merely inadequate or mistaken diagnosis and, when of cardiac etiology, respond usually with almost dramatic promptness to proper treatment.

He summarizes as follows: 1. The prevalent conception of the gastric neuroses is inadequate and insufficient as a basis for helpful therapy.

2. The so-called gastric neuroses, whether motor or secretory depend almost wholly upon an underlying asthenia usually of the congenital type.

3. To include the symptom complex of so-called nervous dyspepsia under the indefinite term neurasthenia is to stop short of its real etiologic origin.

4. Most, if not all, cases of neurasthenia of the passive type, when not due to masked organic disease, are but a part of the clinical state of congenital asthenia.

5. Many cases diagnosed as neurasthenia or nervous dyspepsia are due to unrecognized organic ailments.

6. Pain manifestations are so variable as to character, site, severity, and persistence as to lead to much futile and damaging operative interference.

7. Surgery is contra-indicated in cases of the asthenic habitus unless antecedent careful examination reveals an organic lesion clearly demanding an operation for its relief.

8. Primary recourse to surgery as a means of relief for the gastroptosis,nephroptosis, and other complaints of the more or less well-defined visceroptosis characteristic of the congenital asthenic habitus is not justifiable.

9. Individuals presenting the stigmata of the asthenic habitus and carrying organic lesions clearly demanding surgical interference should, if possible, receive pre-operative and post-operative treatment directed to the improvement of any marked malnutrition present. Many cases, apparently surgical, respond with extraordinary promptness to proper medical measures.

10. In the light of the modern conception of its origin and assuming that the measures indicated for its relief are available and within the means of the patient, nervous dyspepsia becomes therapeutically a hopeful rather than hopeless ailment.

THE PHENOLSULPHONEPHTHALEIN TEST.—F. B. Block, Philadelphia (*Journal. A. M. A.*), says that the phenolsulphonephthalein test is now recognized as superior to any other test for kidney function and can be re-

lied on when the other laboratory tests might fail. He reports a case illustrating this fact. He also reports the results of the use of the test in about twenty cases admitted to the gynecologic ward of the University Hospital which had been sent in as good surgical risks and offers the following tentative conclusions: "Although this series is entirely too small to serve as a basis for any definite conclusions, nevertheless, as far as it has gone it seems to indicate the following: 1. The effect of ether anesthesia on healthy kidneys is practically nil so far as reducing the excretory power of these organs is concerned. 2. Traces of albumin in the urine before operation should not give much concern, but clouds of albumin accompanied by casts should be considered seriously before the performance of elective operations. 3. The duration of anesthesia in any given case does not in itself signify the amount of injury which the kidneys will sustain. 4. The position of the patient on the table, the character of the operation and the administration of protoclysis have not shown any effect of the percentage of phenolsulphonephthalein excretion after as compared with that before operation. 5. In one-third of the cases there is an increased excretion after operation."

TRANSFUSION IN DIABETES. — B. O. Raulston and R. T. Woodyatt, Chicago (*Journal A. M. A.*), review and criticise the experiments that have been made that support the view of the connection of the pancreatic function in the normal utilization of sugar. If correct, it might be inferred that clinical blood-transfusion might be at least of temporary value in the treatment of diabetes and they say, that in view of the practical importance of this point, they have long had it in mind that, when the stage of diabetes is reached when intravenous therapy is used, it might be well to try the substitution of fresh blood for sugar solution or alkali. In a case of diabetes mellitus approaching its termination in which all known expedients had failed, they tried the experiment of transfusion. A brother, two years older than the patient was the donor and the transfusion was made by Drs. Curtis and David according to the method devised by them. The results were not favorable. They say: "The transfusion of 500 c.c. of peripheral venous blood from a healthy male donor into the peripheral veins of a brother suffering from severe diabetes mellitus has a deleterious effect on the metabolism of the latter, as evidenced by a marked rise in the output of sugar, ammonium, and acetone bodies, and an increase of the dextrose-nitrogen ratio."

A PRACTICAL METHOD OF DRYING CULTURES OF BACTERIA.—All the better class of creameries use for ripening cream pure cultures of bacteria which are obtained at regular intervals from commercial laboratories. These are carried in the creameries by transferring milk cultures. from day to day, the culture being renewed occasionally to insure its purity. The small milk culture, known as a "mother starter," is usually carried in bottles or small jars, from which it is transferred to a large can or vat of milk to make the starter used to ripen the cream.

The ideal culture for distribution is in a dry form, sufficiently active to produce rapid growth when it is added to milk and yet so dormant that it can be held a long time without losing its activity. But the difficulties of producing a culture in this condition are so great that the most successful of the commercial cultures are distributed in a liquid medium and must be used within a comparatively short time. A few cultures, however, have been sold continuously in a powder or tablet form; in other cases the liquid culture has been found to be more satisfactory and the dry culture has been abandoned.

Recently the general interest in fermented milks, especially those of the Yoghourt type, has stimulated the production of various kinds of tablets and capsules which ostensibly contain the organism in such quantities that the culture can be used to start a fermentation in milk or to inoculate the digestive tract by direct consumption. These cultures, as well as those sold for butter

making and cheese making, are of real value only when they contain a suitable organism free from contamination and are sufficiently active to start the acid fermentation before accidental contamination can develop to an appreciable extent.

The butter cultures sold in the dry form are powders or tablets, sometimes prepared with a filler of starch or lactose, or are milk cultures dried and pulverized.

It is obvious that in the ordinary process of drying cultures there is a great decrease in the number of bacteria originally present in the culture, and it is probable that there is a still further loss as the culture is held after drying.

As a result of recent experiments the Dairy Division of the Bureau of Animal Industry, United States Department of Agriculture, has devised a method of drying cultures by which the loss in bacterial content is greatly reduced. Experiments in removing the water by a spray carried up by a current of warm dry air were found to produce satisfactory dry cultures, but rapid drying by this process requires the use of complicated and expensive machinery not within the reach of the ordinary laboratory.

Cultures were then successfully evaporated by freezing and lowering the atmospheric pressure. Phosphorus pentoxid and lime were used to absorb the moisture, but sulphuric acid proved to be the best agent for this purpose.

These experiments show conclusively that water may be removed from cultures of bacteria used in the manufacture of dairy products by exposing them in a frozen condition over sulphuric acid in a vacuum approximating 0.01 mm.

Fresh lactic cultures dried by this method are sufficiently active to curdle milk in 17 hours at 30° C., when added in the ratio of 1 part of powder to 1,000,000 parts of milk.

The total number of bacteria in a milk culture may be increased by adding dibasic potassium phosphate, but the powder made from the culture is less active than that made from unneutralized milk. The activity of the powder is not increased by neutralizinig the culture with calcium carbonate before drying.

More powder may be produced at each operation of the drier by using a culture grown in milk concentrated to one-half its original volume, and this powder is as active as that made from normal milk.

The activity of a dried culture diminishes more or less rapidly, depending on the conditions under which it is held. The loss of activity in powders is much more rapid when the moisture content is comparatively high. The loss in activity is very slow at 0° C. or lower, and becomes more rapid as the temperature is increased. Dried cultures of the lactic-acid bacteria held at 30° or 37° C. become inactive in a short time. Cultures held in a vacuum retain their activity much better than cultures in an atmosphere of nitrogen or hydrogen; the most rapid loss of activity takes place either in air or in an atmosphere of oxygen.

Very active dried cultures of *Bacillus bulgaricus* may be made by the freezing-vacuum method; they curdle milk in 20 hours at 37° C. when added to milk in the ratio of 1 to 100,000.

The nitrogen-fixing bacteria may be dried with a small loss by the freezing-vacuum method.

Yeasts evidently do not survive the process, for the powders obtained were very feeble.

THE COST OF PASTEURIZING MILK.—With a properly designed and properly operated plant, the average cost of pasteurizing milk is $0.00313 a gallon, and of cream $0.00634 a gallon, according to tests recently conducted by the U. S. Department of Agriculture. These tests also show that the "flash" process, by which milk is raised to a temperature of 165° F. and kept there for a moment only, is more expensive than the "holder" process, in which milk is maintained for 30 minutes at a temperature of 135° to 145°. The "holder" process requires 17 per cent. less heat than the other, and in addition, there is a saving on the expense of cooling. For hygienic reasons, also, the Department recommends the "holder" process.

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MIND AND MATTER.

We are learning more and more to recognize the influence of the mind over the body, and to see in this a power to both produce and cure diseases, especially of a nervous type. The subject is yet in process of development, and how much may come of it remains to be determined by further experiment and investigation.

We are sure there is a wonderful power in suggestion, and mental therapeutics is growing. If there can be that union of psychology and physiology, separated from a religious fear of materialism, it would result in valuable additions to our therapeutic system. Mind, sitting on a physical throne, as a ruler, depends for its support upon proper performance of function, of all its subjects, *i. e.*, the organs. The proper control of mind over body cannot be properly estimated. Until physicians are possessed of this fundamental knowledge they will not be so able to determine what part of the histories of patients, detailed of them, is due to disturbed metabolism, and how much may be credited to an exaggerated imagination or to wilful mendacity. Nor will they be able to have persons who are really ill, under so-called Christian Science, recover, when neither Christ or Science had any association with the management. They will realize, however, that the conditions, so far as medicine is concerned, are due to a shortage of knowledge, and a misapplication of mental endowments by the parties to the affair. Most of the adherents of Christian Science are good people, who do not understand the nature and function of Mind: whose lack of knowledge, and surplus of faith work mischief in medical affairs only when the disease is one which the *vis medicatrix naturae*, assisted by the patient's conviction of the truth of the fad on which he relies for help, will cure. There are those who claim direct assistance of heaven not only to abort but to cure disease. They are similar to Christian Science, and are met and exposed by the same arguments. It is the duty of enlightened and progressive medical men to combat and refute error in whatever phase it may appear.

Along the mental phase, it is as yet true, as in olden times, crowds jostle around the osteopath, the hypnotist, the fake electrician and all manner of fakers and pretenders, just as they once did about charms, sorcery, incantations, astrology, and sooth-saying, so now it is Christian Science practitioners and faith cures, even with *absent treatment!*

It has been thus for ages, and humbugs will continue for ages to come. With all the "lo heres and lo theres," we still think progress is being made in an intelligent, honest, and scientific practice of the healing art. It has advanced in experimental manipulation, and philosophic research and reasoning.

No theory finds favor unless founded upon established facts.—D. L. F.

WE OUGHT TO STUDY DRUGS MORE.

It would seem that the short editorial comment in the last number of *Medical*

Standard is worthy of consideration by our general practitioner or, as the writer says:

We—meaning by "we" the real working medical men—are leaving too much to the research branch of the profession, i. e., to our various councils, institutes, and laboratories. Not that we should try to get along without the latter or would subtract one iota from the praise that should be theirs for the splendid work they have been doing. But we have got into the very bad habit of accepting what they say as final.

If someone inquires whether a certain drug has merit or not it is promptly referred to the Council on Pharmacy and Chemistry; the Council, in turn, refers it to some laboratory or institute; and the big man in charge at this point turns it over to some bright young assistant just out of college who happens to have a penchant for "research." This young man puts the suspected drug through its paces. It is analyzed. Its active principles are carefully estimated. It is tried on a guinea pig—then on a rabbit—then on a dog. The young man nearly always finds out something interesting about the drug, and his report is turned over to his chief for an "O. K." He in turn turns it over to the Council, and the Council is *very* likely, we fear, to add its own indorsement to the report and send out to the world the pronunciamento that the remedy is excellent or worthless (usually the latter) as the case may be.

This method is all right up to a certain point. But it is all wrong when it is used as a substitute, even by inference, for actual extended clinical experience. Take echinacea, for example. Our Eclectic brethren raise a united voice in its praise. Hundreds and perhaps thousands of men are prepared to make the unqualified statement that it is of very great value in certain "septic" states—using the word septic for lack of a better term. The negation of values to that drug by a bright young laboratory man does not convince them it is worthless. Nor should it convince anyone else. Even modern science is "swapping horses" or hypotheses too often to be accepted as infallible.

What we need is a clinical court that can be depended upon. Personally, I place more faith in the testimony of such men as Solis-Cohen, H. A. Hare, and a few others like them, *who are actual practitioners of medicine*, than I do in the combined wisdom of the laboratories of the country. When these men are backed by the experience of some thousands of hard-working general practitioners I will support them against all the thunderings of the Council.

EUGENICS, EUTHENICS, HYGIENICS.

Here we have three great words, words that have been formed from the greatest of all languages, the Greek. Eugenics has attracted much attention for some years, and deservedly so. The study of heredity is a study of vast importance, no matter whether we follow the Darwinian school, Daltonism, or that school of thought led so ably by Weismann. There is much in heredity, and the experienced breeder mates healthy animals. Eugenics means to be well born in the sense of good ancestry.

Euthenics on the other hand, deals with environments, and rearing. No matter what the heredity may be, the best may be blighted by bad environments, training, food and so on. In the same manner, much that is faulty by inheritance may be improved and elevated by favorable conditions. So then euthenics and hygiene blend themselves with the conditions that improve the human being after it has come into the world.

But right here euthenics and eugenics blend into the halves of a blessed pair. By careful and prolonged attention to euthenics the individual is vastly improved, both physically and mentally. This shows itself in the next generation. The euthenics of today is the eugenics of tomorrow. So then begin now and improve the growing child; for the child is father of the man, and the man is the father of the future child. How long this simple truth has lain dormant! The fact that it is so simple does not lessen its value, but to all lovers of true progress there is genuine pleasure to be found in the fact that so many distinguished persons are now holding a brief for the child.

When slums are abolished in cities, when schools are sanitary, when workshops are healthy, when children are properly taught, when they receive proper food, when they

are supplied with proper clothing, and when the moral atmosphere in which they move and have their being is proper, then will there be true progress, and eugenics will be within our vision.—*Canada Lancet.*

POST-GRADUATE STUDY.

The need of more post-graduate study, says *American Medicine*, has been commented upon so often that it seems a waste of time to discuss it any further. Efficiency can not be acquired in the few years devoted to undergraduate study, but to refuse a license to a man until he has attained the highest possible skill is not practicable. The newly licensed young doctor must learn for himself in the special line of work he selects or into which fate thrusts him. Experience shows that he can do this infinitely better if he can spend a few weeks in his dull season every year or two at some nearby city, at the feet of those who have already attained skill in that direction. Our post-graduate schools seem to be drifting into this role of supplementing the undergraduate institutions though they were organized to help busy general practitioners who had not kept abreast of the times through lack of time. Nevertheless we must utter a protest against the assumption of some of these teachers that the country doctor is necessarily behind the times and is in duty bound to receive instruction from his city brother every little while. As a matter of fact the great medical advances are often if not generally made by country doctors, like Jenner, and the city men stand in the way of progress. The greatest living heart specialist, who has so well explained cardiac mechanisms, was a country doctor most of his life. Medical literature is now so voluminous and cheap, that the general practitioner in the city or country is made aware of new things almost instantly. It is amazing what splendid and advanced surgery is being practiced in little back woods towns, and what bad kinds we often see in the cities. We hope then to see the post-graduate schools catering more to the urgent demand for instruction which supplements the regular schools, and less to the *supposedly* backward doctors of the country.

EUGENIC KNOCKERS.

A good many grow weary of hearing so much eugenics stuff, and not a few writers and speakers are busy "knocking" on the whole system. It is true that the enthusiastic supporters of race betterment have in some instances carried out their plans with more enthusiasm than conservatism. But on high altruistic grounds few of us can oppose those measures which will stop the propagation of the unfit. The knockers point with a great deal of pride to a number of the world's geniuses who were weaklings physically, but this is no argument to substantiate the belief that such persons would become the fathers of desirable offspring. The fact that Bobby Burns could write brilliant verse while drunk does not prove that whiskey drinking is a good thing. Education and environment help only those who have some semblance of a good blood strain. In many families there are bad strains that have been perpetuated for many generations. In almost every community may be found families in which evolution is reversed and their condition is worse than it was several thousand years ago. There must be in the blood and brain that inherent and intangible quality which is amenable to cultivation to enable its possessor to go forward. We find the greatest evidence of "unfitness" at the two social extremes—the low and debased and the aristocratic decadent.—*Medical Summary.*

THE VALUE OF FRUIT JUICES FOR CHILDREN.

While most fruits are composed largely of water, in some instances as much as 90 per cent., they still have a food value largely of starch and sugar. The sugar most abundant in fruits is levulose or fruit-sugar, which is sweeter than other sugars, and is more easily digested and assimilated than cane-sugar. Fruit-sugar is a predigested food, which is readily assimilated into the blood and speedily becomes effective for nutritive purposes.

Fruits are rich in salts and acids. The salts of potash predominate, but salts of soda, lime, iron phosphorus, sulphur magnesium manganese, etc., as well as sodium

chloride or common salt, are also found. Earthy salts are scarce; hence fruits can usually be given with impunity to those who suffer from degeneration of the blood-vessels. The pleasant, cooling, refreshing properties of fruits are largely due to the acids. Citric acid, one of the most common, as well as one of the most wholesome, is abundant in lemons, limes, citrons, oranges, and grapefruit. Tartaric acid (in grapes) also produces cooling and refreshing effects.

Most fruits, when properly ripened and eaten under favorable conditions, including proper mastication, give little digestive trouble. Fruit-juices are most easily digested and assimilated, since their chief contents besides water are fruit-sugar salts and acids. Many persons invite digestive trouble by mixing fruit, particularly acid fruits, with milk foods, or by mixing fruits and vegetables. Fruit either fresh or stewed, always goes well with nuts, breadstuffs, and cereal preparations. It does not assist digestion to eat too large a variety of fruits or other foods at the same meal.

Most difficulties with the digestibility of fruit are due to eating it when unripe or overripe. It is poor economy to buy fruit which is "gone" or is "going." Better pay a little more and get perfectly fresh, sound fruit, and avoid danger of colic or diarrhea.

Fruit should be eaten at meal time with other food. Eating between meals or at irregular times, is apt to upset the digestive organs.

There is scarcely a drink more refreshing than freshly-made lemonade. The larder should always contain lemons. Lemonade, taken freely, is excellent for those who are developing a cold in the head.

Orangeade and the juice of fresh grapes, cherries, blackberries, gooseberries, green gages, pineapples, and apples, make delicious drinks, which can be taken with impunity. Cold fruit drinks are most refreshing and cooling to fever patients. Such drinks are always acceptable, and they help lower the temperature and alleviate symptoms.

Non-alcoholic grape wines make a splendid tonic for children suffering from anemea nervous debility, neurasthenia, and other disorders.

Nature's aperient consists of laxative fruit taken freely with meals. The more effective laxative fruits are figs, prunes, grapes, raisins, currants, and dates. The ripe olive is also a very efficient laxative.—*Pedratries.*

SYPHILIS DIAGNOSED AS DIPHTHERIA.

Acase of syphilitic sore throat seen while diphtheria cases were in the community and giving rise to a white membrane in the throat, diagnosed as diphtheria, is reported by E. L. Glaze, Athens, Ala. (*Journal A. M. A.*). Antidiphtheritic treatment was employed and the eruption that followed was attributed to the antitoxin; the result was a specially malignant case of syphilis. The case is reported on account of the mistake in diagnosis and in not promptly revealing the true nature of the disease in time. It also shows the importance of more thorough examination of all cases.

THE NEW PURE FOOD DECISION.

The new pure food decision of the United States Supreme Court, permits the use of poisons in food if they are not to conceal defects and are not in sufficient amount to injure health. No preparation can be prohibited merely because it contains poisons. This interpretation of the law has given great offense in some quarters, but it was the only action possible, or we would be deprived of smoked ham because it contains creosote. The original mistake was in the interpretation of the data supplied by "poison squads." Some of the ablest toxicologists in the world have decided that the evidence did not prove anything one way or the other, or, at least, that if the small amounts consumed were harmful, the damage was too slight to be detected. The policy was adopted of presuming that certain things were harmful whereas they might have been as harmless as the minute quantities of creosote we have been consuming for years. There is no cause for the pessimistic utterances as to the destruction of the effectiveness of the law. The statute is not altered in the least, since the decision distinctly states that harmful things are still prohibited, only the prosecution must prove injury. Similarly the con-

cealment of defects is illegal. There are plenty of bad things going on which should be prohibited, and we need not worry over the trivial. If the law gives manufacturers the opportunity to use too much poison, it should be recalled that the Supreme Court has decided that corporations can be legally deprived of the power to do harm. We prohibit the carrying of concealed deadly weapons on this principle, but we must not so stretch it that no one can carry a penknife. We cannot bring the millennium at once, and we must be satisfied with tiny steps in that direction.—*American Medicine.*

CORRESPONDENCE.

April 1, 1914.

The Editor,

My Dear Sir:—I beg leave to call your attention to enclosed bill and leaflet. The leaflet describes the general plan incorporated in bill. This bill has been reported favorably three times by Committees in Congress, but has failed to pass, mainly on account of unintentional delay.

I should be glad if you will write very soon an editorial favoring the bill, and also publish enclosed letter as to training of young men for criminological and other patho-social work.

In recent years public interest in criminology and allied subjects has increased greatly, yet relatively little has been done on the *scientific* side of the subject. Most of the work being done is sociologic, and however important, does not go to the root of the matter.

For a practical beginning, the idea is to have young men with medical, psychological and anthropological training, first study the inmates (especially the young) of penal and reformatory institutions. Such synthetic training is recommended in order to utilize results of different specialties in the study of man. One of the main objects is to investigate *causes* and by knowledge thus gained furnish a more rational basis for methods of reform.

A most important object of this bill is *uniformity* in methods of studying criminal, pauper and defective classes, making it possible to compare results from different states and countries and thus increase cooperation in our own country as well as between nations, in detection and prevention of crime. In this connection, I might say that our state department has sent a letter in its official mail to all the leading countries of the world suggesting the plan of work described in leaflet. Russia and Belgium have already adopted the plan. The plan also has been recommended by leading medical, legal and religious organizations of this country, as well as by the "International Congress of Criminal Anthropology," of Europe, as shown on page 10 of enclosed leaflet.

As indicated on page 4 of leaflet, City, State and National Governments should each do such work; one cannot transfer its responsibility to the other.

If not convenient to write an editorial, will you be so good as to publish this letter wtih the bill?

Very sincerely,
ARTHUR MAC DONALD.

NEED OF UNIVERSITY MEN TO STUDY MAN.

April 11, 1914.

The Editor,

My Dear Sir:—If I were able, I should be glad to write to every college and university student, who is interested in the scientific and sociologic study of man, especially criminal, pauper and defective men. I trust, therefore, you will publish this letter, and I request each student to regard it as a personal letter to himself.

I appeal to university students to direct their attention especially to the scientific study of humanity. Let the university encourage students more to take up these subjects which have been so long neglected and in which there are great opportunities to

aid humanity, directly, by scientific investigation of the causes of crime, pauperism and defectiveness, in order to prevent and lessen them through knowledge gained by first-hand study of the individuals themselves.

When a student chooses for his life work, a subject in the older branches of knowledge, as physics, philosophy, philology, Greek, Latin and natural history, he finds the field somewhat well developed; but not so in more recent sociological lines of research, as criminal anthropology, and other cognate subjects, in which there is full opportunity for mental acumen and scientific ability of the highest character, to carry out most lofty purposes.

The question may arise as to what course of study will prepare one best for such work. I would suggest the following:

1. Courses in psychology, especially laboratory work.
2. Medical studies to the extent of anatomy, physiology, general pathology, nervous disease and insanity, especially clinical studies.
3. A practical course in craniology in the laboratory.
4. Facility in reading modern languages.

Thus social pathology, especially criminal anthropology, one of its branches, requires more extensive preliminary training perhaps than any subject, for it involves the investigation of man both mentally and physically. Such training is synthetic, which in this age of specialism, is much needed. Some students should be trained to combine and utilize cognate branches of knowledge. They should know enough of such branches to properly interpret the results obtained by specialists. As such education is relatively new and experience in it as yet limited, it is difficult to designate a preparatory course. I have myself followed the course of study just indicated, but more extensively, especially in medical lines, but such additional preparation might not be practicable for most students.

The enclosed leaflet entitled, "Study of Man," explains the work more fully, and as indicated on page one, includes the investigation of superior and successful men as well as of inferior and defective persons.

I shall be glad to mail this leaflet to any student or anyone, gratis, who will send me his or her address. As I have said, "Criminals, paupers, mattiods and other defectives are social bacilli, which require as thorough scientific investigation, as the bacilli of physical diseases."

I beg leave to remain,

Most faithfully,
ARTHUR MAC DONALD.

Address: Arthur Mac Donald, The Congressional, Washington, D. C.

63d CONGRESS—2d SESSION.

H. R. 11887.

In The House of Representatives.

JANUARY 17, 1914.

Mr. Taggart introduced the following bill; which was referred to the Committee on the Judiciary and ordered to be printed.

A BILL

To establish a bureau for the study of the criminal, pauper, and defective classes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established in the Department of Justice a bureau for the study of the abnormal classes, and the work shall include both laboratory investigations and the collection of sociological and pathological data, especially such as may be found in institutions for the criminal, pauper and defective classes. Said bureau and work shall be in charge of a director, who shall be appointed by the President, by and with the advice and consent of the Senate, and shall receive a salary of $3,000 per annum. He shall make a report once a year, directed to the Attorney General, which with the approval of that officer, shall be published. For the aid of the director there shall be one psychologist at $2,000 per annum, one translator at $1,400 per annum, two clerks at $1,200 each, and one stenographer and typewriter at $1,000.

Section 2. That the director, if necessary for the proper discharge of his duties, may place himself in communication with state and municipal and other officials of this and other countries.

Section 3. That for the proper equip-

ment of and carrying on the work of said bureau, the temporary employment of specialists, and the purchase of instruments of precision, books, and periodicals, and rental of rooms, if necessary, there is hereby appropriated, out of any money in the treasury not otherwise appropriated, the sum of $5,000 or so much thereof as may be required.

STUDY OF MAN.

In connection with establishing laboratories to investigate criminal, pauper, and defective classes: by Arthur MacDonald, Washington, D. C., Honorary President of the "Third International Congress of Criminal Anthropology," of Europe.

The study of man includes abnormal as well as normal man. The fundamental conception of the abnormal is *excess* of the normal. When the normal acts in an unfit way, or at the wrong time or place, it may become abnormal. The abnormal is potentially in the normal and is further distinguished from the normal by unequal or less consistency. All that is pathological is abnormal, but not all that is abnormal is pathological. Thus a hand with six fingers is abnormal, but not necessarily pathological.

From normality to abnormality there are many stages, and the difference between these stages is one of degree, and this difference in degree can become so great as to result in a difference in kind. Just as in mixing two chemical fluids, when the quantities reach a certain amount a precipitate is formed which is very different from the ingredients from which it was deposited. These stages constitute what may be called an intermediate zone. In this zone are those who are slightly abnormal mentally, morally, or criminally. Their status may vary with the environment. Thus unfortunate surroundings are liable to develop their abnormalities, while under favorable circumstances, the abnormal may become normal again. Also a man's environment may be abnormal rather than the man himself.

Abnormal man may be abnormal in the right direction, as genius man, talented man or statesman; or in the wrong direction, as criminal, pauper, defective, or mattoid[1] man. It is all *man*, and the study of these different classes might be called the anthropology of the living, as distinguished from that of the dead.

To study abnormal man we must investigate normal man at the same time. For we should know the normal in order to comprehend the abnormal; also the methods of investigation should be similar, for we must have some general criterion or measuring rod to distinguish between them. It is more important to study genius, talent, and statesmanship than it is to investigate crime, pauperism, and defectiveness. For to learn how to become useful, talented, and brilliant citizens is much more advantageous than to discover what causes life's failures. But as society must *first* protect itself, the abnormals in the wrong direction, especially those who are dangerous, need attention first. For however insignificant such abnormals may be in themselves, they are important only on account of the injury they can do.

Criminals, paupers, mattoids, and other defectives are social bacilli, which require as thorough scientific investigation as the bacilli of physical diseases.

A Plan for the Study of Man.*

The greatest of all studies is that of man himself as he is today. A scientific investigation of man must be based primarily upon the individual, who is the unit of the social organism.

If we are ever to have sufficient definite knowledge of living human beings that may

[1]The mattoid or crank) is an abnormal characterized by the want of balance; is eccentric and egotistic and may be sane or insane, or simply illusioned, or dangerous or harmless.

For further description of types of mattoids, see articles (by writer), entitled "Mattoids," in the "Medical Fortnightly" for April 25, 1911, St. Louis, Mo., and "Assassins of Rulers," in "Journal of American Institute of Criminal Law and Criminology," vol. II, No. 4, Chicago Ill.

*Published in the Proceedings of the "Imperial Academy of Sciences of St. Petersburg."

become a *science,* it can only be done by the careful study of large numbers of individuals. The more thorough the study and the larger the number, the more useful such investigation can be made to society.

As in machinery we must first repair the wheels out of gear, so in society we must first study the criminal crank, insane, inebriate or pauper who can seriously injure both individual and community. Thus a worthless crank, by killing a prominent citizen, can paralyze the community. The injury from such action is often beyond calculation. Governments pay out millions to catch, try and care for criminals, but give very little study to the causes that lead to crime.

The study of man, to be of most utility, must be directed *first* to the *causes* of crime, pauperism, alcoholism, degeneracy, and other forms of abnormality. To do this the individuals themselves must be studied. As the seeds of evil are usually sown in childhood and youth, it is here that all investigation should commence, for there is little hope of making the world better if we do not seek the causes of social evils at their beginnings.

The most rigid and best method of study of both children and adults is that of the laboratory, with instruments of precision in connection with sociological data. Such inquiry consists in gathering sociological, pathological, and abnormal data as found in children, in criminal, pauper and defective classes, and in hospitals. Such experiments or measurements should be made as are of interest not only to sociologists, psychophysicists, and anthropologists, but also to physiologists and pathologists.

Question as to Utility.[1]

But, it may be asked, what as to the utility of studying such questions? We think it is not only useful, but there is great need of such investigation. We should like to inquire, for instance, as to the utility of studying rocks and plants, arranging them, making chemical analysis of them, etc., if it is not to give a deeper knowledge of them and thereby learn more about our planet? So the patient and extended study of man, especially children, is to gain more definite knowledge about him and a deeper insight into his nature. The time has certainly come when man, as he *is,* should be studied as much as nature.

Much money has been given and a great interest manifested for the discovery of new chemical elements or the search for unknown planets. We erect statues and found art galleries at great expense. These things may not all be *immediately* useful. Indeed, the highest art spurns even the idea of utility; and yet when it is proposed to study a child thoroughly to gain an insight into its nature, to find the causes of its defects, so that we may protect it and help it to become a good citizen, the utilitarian cry is heard. The time has come when it is important to study a child with as much exactness as we investigate the chemical elements of a stone or measure the mountains on the moon.

If facts about children, whether immediately useful or not, are not important, we desire to ask what is important in life?

Some Conclusions as to Criminal Man.[1]

The following statements as to the criminal are not based upon experimental research so much as upon the experience of those who have studied criminals directly or who have had practical control of large numbers in prisons or reformatories:

1. The prison should be a reformatory and the reformatory a school. The principal object of both should be to teach good mental, moral, and physical habits. Both should be distinctly *educational.*

2. It is detrimental financially, as well as socially and morally, to release prisoners when there is probability of their returning to crime; for in this case the convict is much less expensive than the ex-convict.

3. The determinate sentence permits many prisoners to be released who are morally certain to return to crime. The indeterminate sentence is the best method of affording the prisoner an opportunity to reform

[1] From "Criminology" (by writer).

[1] See article (by writer) entitled "A Laboratory for Sociological, Medical and Jurisprudential Purposes," in Amer. Law Review for Nov.-Dec., 1901, St. Louis, Mo.

without exposing society to unnecessary dangers.

4. The ground for the imprisonment of the criminal is, first of all *because he is dangerous to society*. This principal avoids the uncertainty that may rest upon the decision as to the degree of freedom of will; for upon this last principle some of the most brutal crimes would receive a light punishment. If a tiger is in the street, the main question is not the degree of his freedom of will or guilt. Every man who is dangerous to property or life, whether insane, criminal, or feeble-minded, should be confined, but not necessarily punished.

5. The publication in the newspapers of criminal details and photographs is a positive evil to society, on account of the law of imitation; and, in addition, it makes the criminal proud of his record, and develops the morbid curiosity of the people; and it is especially the mentally and morally weak who are affected.

6. It is admitted by some of the most intelligent criminals, and by prison officers in general, that the criminal is a fool; for he is opposing himself to the best, the largest, and the strongest portion of society, and is almost sure to fail.

Reasons Why Federal, State, and City Governments and Also Private Endowment Should Establish Laboratories for the Study of the Abnormal Classes. Being in part a Résumé of Hearings Given by the Writer, Before the Finance Committee of New York State Senate and the Judiciary Committee of the United States House of Representatives.

BILL[1]

To Establish a Laboratory for the Study of the Criminal, Pauper, and Defective Classes.

Be it enacted by the——, That there shall be established in the—— a laboratory for the study of the abnormal classes, and the work shall include not only laboratory investigations, but also the collection of sociological and pathological data, especially such as may be found in institutions for the criminal, pauper, and defective classes, and generally in hospitals and other institutions. Said laboratory and work shall be in charge of a director, who shall be appointed by the ——, and shall receive a salary of three thousand dollars per annum. He shall make a report once a year, directed to the——, which, with the approval of that officer, shall be published. For the aid of the director there shall be one psychologist, at two thousand dollars; one translator, at one thousand two hundred dollars; one stenographer and typewriter, at one thousand dollars, and one mechanic, at nine hundred dollars. For the proper equipment of and carrying on the work of said laboratory and the rental, if necessary, of suitable rooms therefor, there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of five thousand dollars, or so much thereof as may be required.

It is not expected that such an extensive field of work, as indicated in bill, be undertaken at the outset. It is therefore suggested that a beginning be made with the criminal classes. If necessary, in order to pass bill, it might be reduced, the minimum being a director at one thousand dollars and two hundred dollars for a laboratory. Even with this very small total appropriation of twelve hundred dollars, a beginning can be made.

An idea prevading the bill is that Cities, States, and Nations should look after the *moral* health of the people with as much scientific foresight as they do the physical health of the people. Such work is fundamentally humanitarian. The task is large enough to require the aid of all forms of government and also of private endowment, and it is due time that such efforts be made; for the official statistics of the leading countries of the world show, that within the last thirty or more years, crime, suicide, insanity and other forms of abnormality have been increasing relatively faster than the population.[2]

[1] For consideration of all phases of bill see "Man and Abnormal Man," Senate Document No. 187, 58th Congress, 3d session.

[2] See Senate Document No. 12 (58th Congress, special session), entitled "Statistics of Crime, Suicide, and Insanity," etc.

Meaning of Laboratory.[1]

The term laboratory is used in the broadest sense. Thus studying a criminal in his cell mentally, morally and physically, and with instruments of precision, constitutes a laboratory.

It is a curious circumstance that the study of the criminal himself has been almost entirely neglected; and this is the reason we know so little about the real causes of crime, how much is due to environment and how much to the nature of the criminal; also just how—by what steps and processes—does environment or inward nature, or both, lead to criminal acts. The lawyer studies books, but not the criminal. We say this is strange, for in medicine, the physician always studies the individual who is sick, in order to treat him properly.

But even where the individual is criminal by nature, it is generally his moral and not his intellectual side that is abnormal; so that methods found to be successful in moral education will be applicable outside of prison; and vice versa, any experiment that fails in prison may save the community from making a similar mistake. Thus the prison or reformatory may also serve as a laboratory for experiments on humanity for the good of humanity itself. The pressing need of the present is a system of education that will prepare the average young person for actual life. Such a system will not be found by arguments or theories, but must come from experience. Any reformatory method that might be found successful for the moral, intellectual, and industrial training of the weak in life would be applicable to society at large.

A large number of laboratories have been established, most of which are in the universities. But the plan of these laboratories is mainly for pedagogical purposes. The research work is generally done by students desiring to prepare theses for their doctorates. While many of these are very valuable, a university could hardly extend such work to large numbers of individuals, for to gather the facts, compute and tabulate the results, would involve clerical duties and other work not undertaken by universities. Experiments in the university are generally confined to small numbers of persons, who are a special class, so that it is doubtful whether conclusions obtained can always be applied to people in general.

The main object of a university is to prepare men for work, not to carry on their work.

There is need, then, for a laboratory different from those in our universities—that is, one not pedagogical, but sociological and practical, and of more utility to society directly. In this connection it must be remembered that no *private* institution can have jurisdiction over the study of criminals. It is therefore pre-eminently *a governmental* matter.

The work of such a laboratory, though intimately related to, has no necessary connection with police systems or with criminal law, although the knowledge and facts made known, will serve as a foundation for them to build upon.

No Necessity for so Much Crime.

The question may be asked why so many citizens who are law abiding and respectable should be put to so much trouble and expense by relatively few citizens, who are often mental, moral, and physical weaklings.

The answer is, that this troublesome few might be greatly reduced if they were studied personally and in connection with their surroundings, as has been done in physical disease.

We have been looking upon crime, for instance, as a sort of necessity, and the idea of lessening it as visionary. We have become so accustomed to hearing of crime as to be unconscious of its real extent and enormity; and when realizing it to erroneously assume its increase unavoidable. This was

[1] For some results of laboratory work (by writer) see "Defects of Development in Children," published (in German) in Jahrbuch für Kinderheilkunde, Berlin, 1910; also "Circumference of Head, Cephalic Index," etc., "in Relation to Mental Ability and Sociologic Condition," etc., in Journal of the American Statistical Association, Boston, January, 1912; also, "Man and Abnormal Man."

once the case with some physical diseases, until scientific study reduced them so much that they are now called rare diseases.

One purpose of this work is to furnish a basis for methods of reform, and in addition seek, through knowledge gained by scientific study, to protect the weak (especially the young) in advance BEFORE they have gone wrong, and not AFTER they have fallen and become tainted, which is the great defect of most schemes of reform.[1]

Whether crime increases or not is not nearly so important to know as the fact that there is no necessity for so much crime as exists; for it is due mainly to neglect or ignoring of the subject which, as in physical disease, allows it to push its roots still deeper into the community.

A new line of work is liable to be regarded with caution, if not suspicion, especially if it deal with abnormal subjects. Since MOST new things are to a certain extent radical, any new study or method, however conservative, will be looked upon as radical. As the newspapers deal to a large extent with abnormal matter, the study of such subjects, however important, suffers from a sort of notoriety, and is often made to appear as a fad.

Sometimes religious people hesitate to support such work, because they fear that psycho-physical investigation may lead to materialistic views. But the results from such study have no such tendency. On the contrary, they rather emphasize the power of mind over body.

Large sums of money are being contributed for palliative measures, yet crime and pauperism are increasing in proportion to the population, showing that such measures (almost the only ones) do not lessen these evils. It is not intended here to criticise in the least any effort to alleviate suffering, but such alleviation is usually temporary and may even increase the disease. Investigation of CAUSES is therefore imperative, and this cannot be done without scientific study of the individuals themselves.

Practical Results.

In every new line of work it is impossible to know in advance the practical results, but it is an axiom of science and sociology that no evil can be *permanently* lessened unless its causes be studied first and that such study produce practical results. Science has demonstrated this fact again and again.

"If the student seeking the cause of cholera had been required to state in advance whether he could lessen or cure cholera or not, after he had found its cause, and had been refused aid because such an uncertain work was deemed impracticable, cholera might have been continuing its ravages up to the present time.

"Although no cure has been found, yet the knowledge gained from the study of the cause of this disease has enabled science to prevent it to such an extent that it is now feared no more. To insist on this practical-result requirement in the study of social disease called crime is as unreasonable as it would have been in the case of cholera, and more so, for the ravages of crime exceed many times those of any physical disease."[1]

If the practicability of a new plan of work be a matter of opinion, that opinion has most weight, which comes from those dealing *first hand* with some phase of the work. Such opinion is indicated on the last page of this leaflet, under the head of "Summary of Indorsements of Work."

The main purpose of this bill is to study the causes of crime, pauperism, alcoholism, defectiveness, degeneracy and other forms of abnormality, with a view to lessening or preventing them. It is assumed that every citizen is interested in the purpose of such a bill.

In addition to this general scope of the bill there are some other direct ends which eventually the bill is expected to accomplish.

1. To gain more trustworthy knowledge of social evils. Such knowledge would furnish a basis for modifying defective laws, adapting them to present conditions.

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[1] See address on "Moral Education" (by author) before the "Mary Washington Chapter" of the Daughters of the American Revolution, published (in French) in "La Revue Internationale de l'Enseignement, 15 Aout, 1908. Paris.

[1] From address (by writer) on Social Pathology, before the Harvard University Club of Washington, D. C.

2. To find whether or not there are any physical or mental characteristics that distinguish criminal children from other children. Such knowledge would make it possible to protect children in advance and lessen the chances of contamination.

3. To find whether or not there are any physical and mental characteristics that distinguish habitual from occasional criminals. Such knowledge would enable the community to protect itself in advance from habitual criminals and assist prison officials in preventing them from contaminating other criminals.

4. Exhaustive study of single typical criminals, which represent a large number, will give definite knowledge as to just how men become criminals and to what extent their surroundings influence them as compared with their inward natures. This would make possible a rational application of remedies for these evils.

5. More exact knowledge of the abnormal classes will enable us to manage them better in institutions. Such studies will bring men of better education and training in control of the institutions, and increase interest in the professional study of these classes.

6. Proper and full statistics of the abnormal classes will alone justify this work. Merely skeleton statistics on this subject are sometimes gathered by governments.

7. As most of the inmates of reformatories and prisons are normal, any knowledge gained about them will be useful to the community at large. A scientific study of moral character can, for instance, be conducted best in such institutions.

8. To summarize and combine results already gathered by City, State and Federal institutions and governments, encouraging uniformity of method in collecting data and making such data useful generally.

9. To lessen the enormous expense to governments of the abnormal classes by study of the *causes* of the evils that involve such expense.

10. To appoint *moral* health officers (as well as medical) to study causes and provide measures for protecting City, State and Nation from crime, pauperism, alcoholism, degeneracy, defectiveness and other forms of abnormality.

Since the care, support, and direction of inmates of institutions for the abnormal and weakling classes are under City, State and Federal control, the scientific and sociologic study of these inmates naturally falls under the same control.

The great progress already made by governmental scientific investigation of physical disease suggests governmental application of similar methods in the study of moral and social disease, the necessity of preventing or lessening which is much more urgent.

One reason why so many professional organizations dealing *first hand* with some phase of this work support this measure is that they think it is time that governments begin a serious study of those social evils which are their greatest enemies. Many worthy efforts are being made to lessen social evils, but they are mostly *palliative,* and do not go to the root of the matter.

One feature of this work, of interest to all lovers of truth, is the application of the results and methods of anthropology, psychology, medicine, sociology, and other sciences to the abnormal and weakling classes, thus constituting a new synthetic study, which may bring out truths that apply as well to *normal* man as to abnormal man; for in the case of penal institutions most of the inmates, as already stated, are normal, their crime being due to unfortunate surroundings and not to their inward natures. Even really abnormal persons, that is, those positively abnormal in at least a few respects, are nevertheless normal in most things, so that whatever be found true of them is to a large extent true of all persons. Though such results be incidental, they may be none the less important.

As an illustration of the application of psycho-physics to sociology, a minor study of sensibility to pain in persons of different social and mental conditions,[1] is here added.

Measurements of Pain.

We give some of our results of pain measurements on different classes of individuals, in all, 2,311.

1. In general the sensibility to pain de-

[1] From a paper read by writer before the American Psychological Association.

creases as age increases. The left temple is more sensitive than the right. This accords with former experiments that the left hand is more sensitive to pain than the right hand.

2. Girls in private schools, who are generally of wealthy parents, are much more sensitive to pain than girls in the public schools. It would appear that refinements and luxuries tend to increase sensitiveness to pain. The hardihood which the great majority must experience seems advantageous. This also accords with our previous measurements, that the non-laboring (professional and mercantile) classes are more sensitive to pain than the laboring classes.

3. University women are more sensitive than washerwomen, but less sensitive than business women. There seems, however, to be no necessary relation between intellectual development and pain sensitiveness. Obtuseness to pain appears to be due more to hardihood in early life.

4. Self-educated women, who are not trained in universities, are more sensitive than business women. The greater sensitiveness of self-educated women as compared with university women may be due to the overtaxing of the nervous system of the former in their unequal struggle after knowledge.

5. Girls in the public schools are more sensitive at all ages than boys. This agrees with the results of our previous measurements that women are more sensitive to pain than men. But this does not necessarily refer to endurance of pain.

These measurements of least disagreeableness, or of threshold of pain, are approximate measurements of the combination of nerve, feeling, and idea. Which one of these elements influences the combined result most would be difficult to say.

Below is a description of the temporal algometer (designed by the writer) used in the experiments:

It consists of a brass cylinder, with a steel rod running through one of the ends of the cylinder. This rod is attached to a spring, with a marker on the scale; this scale is graded from 0 to 4,000 grammes. The brass disc is 15 millimeters in diameter; a piece of flannel is glued to its surface, so as to exclude the feeling of the metal when pressed against the skin, thus giving a pure pressure sensation. The whole instrument is 30 centimeters in length.

In using this algometer it is held in the right hand by the experimenter, who stands back of the subject and presses the disc against the right temporal muscle, and then he moves in front of the subject, where he can conveniently press the disc against the left temporal muscle. These muscles are preferred because no trade or profession materially affects them. They are also conveniently situated.

As soon as the subject feels the pressure to be in the *least disagreeable* the amount of pressure is read by observing the marker on the scale. The subject sometimes hesitates to say just when the pressure becomes in the least disagreeable, but this is part of the experiment. The purpose is to approximate as near as possible to the threshold of pain.

NEW BOOKS.

DUODENAL ULCER.

Duodenal Ulcer. By B. G. A. Moynihan, M. S. (London) F. R. C. S., Senior Assistant Surgeon at Leeds General Infirmary, England. Second edition, enlarged. Octavo of 486 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, $5.00 net; Half Morocco, $6.50 net.

The second edition of this work has been increased by over one hundred pages.

A new chapter of jejunal and gastro jejunal ulcer has been added but otherwise the changes have been mostly concerned with the differential diagonsis of duodenal ulcer and the results of x-ray examinations of the stomach after the administration of bismuth.

This volume is a complete monograph on

the subject of duodenal ulcer and should be in the hands of every physician.

SURGICAL AFTER-TREATMENT.

Surgical After-Treatment. By. L. R. G. Crandon, M. D., Assistant in Surgery at Harvard Medical School, and Albert Ehrenfried, M. D., Assistant in Anatomy at Harvard Medical School. Second edition, practically rewritten. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $6.00 net; Half Morocco, $7.50 net.

The second edition of this work has been thoroughly revised and many new sections added, increasing the book by some thirty pages.

Among the new matter we note headache as a complication of surgery. Intravenous infusion, fat embolism, an embolism cancer of the lip, oesophegeal diverticula omphalitis, tuberculous peritonitis, inoperable malignant disease of the pelvis, extraperitoneal, Caesarian Section, etc. The chapter on immunization and vaccine treatment has been largely rewritten. We can add nothing to the criticism of our former review and we can heartily endorse this work as a most valuable aid to the hospital internist and practitioner who is obliged by necessity to follow out the after care of a surgical case.

"International Clinics," a quarterly of International Clinical Lectures, and especially prepared original articles, by leading members of the medical profession throughout the world, Vol. IV., twenty-second series, 1912. (Philadelphia and London, J. B. Lippincott Company, 1912. Price $2.00.)

In this volume, the contributors to this valuable publication, seem to have outdone themselves. To give a bare catalogue of the contents of this issue, would almost fill the limits usually assigned to a book review. There are certain contributions which are deserving of more than a passing mention. The Parathyroid Treatment of Paralysis Agitans by Wm. N. Berkeley, is one calculated to arrest the attention of every physician. A very useful contribution is that of James J. Walsh on Stimulants of Nervous Exhaustion. The features of the Normal Heart by Paul Bergnigan is more than a prefunctory article and is destined to awaken much discussion. Anorectal Fistula, as set forth by Bernard Asman, is more than ordinarily interesting and useful. A magnificent biography of Benjamin Rush, by Thomas W. Harvey, will awaken interest in the entire medical profession of this country, and justly so. Another more than ordinarily interesting composition is that devoted to the Rockefeller Institute for Medical Research, by John Anem. We have not mentioned a tithe of the articles in this volume, but rather a sufficient number of them to awaken more than ordinary interest in it.

E. F. Benson, one of the three famous sons of the late Archbishop of Canterbury, has many novels and essays to his credit. His latest book is the intensely modern novel, "Dodo's Daughter." Mr. Benson will contribute to the June Travel Number of *The Century* an article, "Dewan-i-Khas, or The Hall of Private Audience at Delhi."

"A Painted City of the Spanish Main" (Camaguey) will be described and illustrated in the June Travel Number of *The Century*, by Julius Muller and W. M. Berger respectively.

Doctor Charles William McFarlane, in "The 'Gex' Portrait of Lord Byron," which is announced for the June Travel Number of *The Century*, will supply a great deal of interesting information on the physiognomy of Lord Byron.

What may be considered a sign of the times is that *The Century Magazine* will begin in June the publication of a series of stories by George Bronson-Howard, written around the French hero of historic romance, Francois Villon, who inspired Robert Louis Stevenson to write what good judges call his greatest piece of fiction; and that while these stories are appearing in *The Century*, they will be reproduced in moving-picture plays (Universal) of great beauty and effectiveness. As is well-known, the leading novelists, playwrights, and producers are now beginning to devote their best talents to the wordless drama.

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TETANUS.

By Wm. F. Waugh, Chicago, Ills.

Some time, in that good time coming when he has grown wise, man will utilize the knowledge and improve the possibilities that now lie about him on every side unnoticed. Then shall we see men put their stores of individual knowledge together, compare, add, eliminate, sum; and the result will be, that each enjoys the stock of all, corrected and enhanced by the contributions of every other.

Nowhere else is this correlation needed so much as it is in the domain of medicine. Here we have vast collections of facts made by competent observers, most of which perish with the one who gathered them together, few of them ever passing along to others. Fragmentary and imperfect must be the work of each. One eye sees a plane surface; two give a stereoscopic view that shows solidly. Another pair of eyes see a different aspect; and there may be as many aspects and sides as there are observers. Yet, if one could but bring together all these isolated observations, each one of these individuals would the better comprehend what he sees, for the light thrown upon it by the others.

Take tetanus as an example: Baccelli announced remarkable success in the treatment of that malady with hypodermic injections of phenol. (Thirty years ago a French chemic house spent money fruitlessly in an endeavor to introduce a line of nascent phenols as remedies.) Trials in Italy confirmed Baccelli's claims; trials elsewhere did not. The conclusion reached was, that tetanus appears in Italy under a more manageable form than in other countries.

A southern physician, in antebellum days, described graphically the cure of a slave as the result of one ounce of quinine taken by mistake. Acting upon this hint, the doctor thereupon treated successfully other negro slaves for tetanus with 100-grain doses of quinine. The present writer, sometime later consulted by letter about a case of tetanus, quoted this story. The patient in question was given 100 grains of quinine, but the only effect, according to his doctor, was to aggravate the patient's sufferings. Query: Has quinine an action in tetanus with negroes it does not manifest in whites?

There are to us several as yet unsolved problems in the treatment of tetanus. Has pilocarpine ever been really tried out? Has nuclein solution ever been administered adequately? Has the sedation of gelseminine, or of the combination of hyoscine, morphine and cactin, been pushed to its ultimate possibility of benefit? Has local treatment to extirpate the bacilli in the wound, and along the nerve-trunks leading from it, been as thorough as modern methods permit?

In a recent issue of *Le Monde Mêdical*, the treatment of tetanus is discussed. There are two major indications—to sterilize the tetanogenous wound and destroy locally the microbe of Nicolaier by a careful disinfection of the infected foyer; and, to neutralize the tetanotoxin by preventive injection of the serum.

The wound, soiled with earth, especially with dung, and in particular that of the horse, should be minutely disinfected and cleaned. So with any suppurating wound. Remove bony splinters and foreign matter. Wash copiously with oxygenated water, which is microbicide to anaerobes. Apply tincture of iodine, and let it penetrate every corner and crevice. This is the more indispensable, since suppuration favors the development of the tetanus bacillus, and its toxin

as then secreted is much more virulent. This renders it important that the transitory immunity conferred by a preventive dose of serum should not be exhausted until the bacilli have disappeared from the wound; if it is otherwise, nothing will prevent the tetanus from remaining and taking the offensive. Some surgeons even excise the septic foyer. Others curette. Cauterization has been abandoned, since microbes develop under the scars.

Then there is serotherapy. Vaillard and Chattot collected 51 reported cases of failure. Of these, 14 proved to be errors in diagnoses—pseudo-tetanus; 5 were doubtful; in 32 tetanus developed despite the serum. But in some the dry serum of Calmette was dusted over the wound, a method now known to be insufficient. Dehue and Hamburger showed that the passive immunity determined by one injection is only provisional and endures not more than eight days. In ten observations (Descomps), tetanus supervened in from seventeen to eighty-seven days after the one only preventive injection; in 29 cases, from eleven to fourteen days passed. Of 51 cases, there were but 12 in which serotherapy was put in check; a very small proportion of the cases in which it was applied.

The causes of failure were: Lateness of injection, rapid dissemination of the infection in subacute cases, the wounds of the patient prolonging the suppuration, and especially insufficiency of dosage of the serum.

It has also been alleged that the injections induced complications, causing death, or even occasioned tetanus itself. These are complications attacking to serums generally, and are not peculiar to the antitetanic variety. They may be arranged under two categories, namely: (1) Those produced after one injection. These make their appearance from the eighth to the twelfth day. About the point of injection there is a red edema, with urticaria, which becomes general; also pains, oppression, fever, general debility; grave phenomena are exceptional. (2) Complications following reinjection are altogether different. At least two weeks elapse before the injection is repeated, and it may be anything up to a year. The grave symptoms develop rapidly: phlegmonous edema about the point of injection, multiple adenopathies, vomiting, dyspnea, cardiac failure, albuminuria, anuria, and occasionally even death.

These phenomena are attributable to anaphylaxis. In any event, they are exceptional and do not justify rejection of serum therapy. Besides, they may be avoided by a good technic. Lucas-Championnière says: "Antitetanic prophylaxis remains a duty to the surgeon and a right to the patient."

Descomps gives the following rules:

As quickly as possible after the accident, give a subcutaneous preventive injection of a serum that has been *freshly prepared.* Old serums may cause grave complications.

Antisepticize the point of injection, the arm, the outside of the thigh, the flank.

Inject at once a strong dose—from 10 to 30 c.c., according to the state of the wound. Lacerated, dirty wounds require large doses.

Repeat the injections next day, and the next, to a dose totaling 30 c.c. in benign cases (10 c.c. a day) and 50 or even 80 c.c. in grave cases, in the period of three days.

Grave traumatisms or prolonged suppurations necessitate repetition of the injections every eight days, until the wound is cured.

In order to avoid the complications of anaphylactic shock, this advice is offered:

Ascertain whether the patient already has received an injection of any sort of serum. If so, begin with small doses, one-fourth, one-half or a full cubic centimeter divided into two or three parts, an hour intervening, followed by a massive injection four hours after the first one. Six to ten hours before the injection one may give the patient an enema of 10 to 15 c.c. of the serum. In any event, administer a massive injection of the serum, by the same method; repeating it every five days.

The treatment of confirmed tetanus should be along the lines as here laid down. Despite its gravity, one need not despair.

First extirpate the infected place of entrance, open all *culs-de-sac* and all torn flesh, drain freely, curette the wound, excise morbid tissues, wash and then dress.

To combat extreme excitability, nervous contractures or pain, give chloral in large doses—8 to 12 grams a day, adding potassium bromide, if indicated; give it by mouth, if possible, or else rectally. When urgent, inject intramuscularly a solution of 1 part

of chloral hydrate in 5 parts of distilled water.

Baccelli used phenol, injecting daily 1 gram in a 2 or 3 per cent. solution, given fractionally in two or three doses.

Quite recently magnesium sulphate has been recommended. A 25 per cent. solution is administered by way of lumbar puncture. A little of the spinal fluid is withdrawn and then the solution named is injected, 1 c.c. for every 40 pounds' weight of the body. Later the doses may be increased; never, though, passing the limit of 1 c.c. for each 20 pounds' weight. The sedation is remarkable; occasionally a cure results. The method is as yet under trial.

In fully established tetanus, serotherapy is infinitely less satisfactory. When the nervous centers already have taken up the tetanic poison, one can not look for any benefit in acute cases. Frequently the serum is beneficial in chronic forms. Nevertheless, the serum does produce a passing amelioration in rapidly progressing cases, and quite recently some happy results have been recorded. Subcutaneous injections are too slow here, too weak, and too liable to accidents. If at all resorted to, the dose should be 80 c.c. per day, in frequently repeated fractional doses.

The intravenous method gives better results, and many successes have recently been won by it. By this method, the antitoxin diffuses with extreme rapidity. The doses should be from 140 to 360 c.c. Darier and Flandin advise 100 c.c. the first day, 50 c.c. the second, and 20 to 40 c.c. on each succeeding day. At the same time make supplementary injections, either subcutaneous or subarachnoidean.

Roux and Borrel have advocated intracerebral injections, that carry the antitoxin directly to the point of accumulation of the tetanic poison. This method is more delicate and dangerous, since it requires trephining.

Sicard has praised the subarachnoidean injections. This is logical, for the tetanus toxin acts more on the cord than on the centers. It is easy, the technic being that of lumbar puncture. From 15 to 40 c.c. of the cephalorhachidian fluid is withdrawn and replaced by an equal quantity of serum, injected very gently. One difficulty is found in the patient's spasmodic contractures, which may necessitate anesthetizing. After the injection has been given, the patient is placed with shoulders and head lowered.

Paranervous injections along the great nerve-trunks, and epidural, have been proposed by Sicard.

To sum up: Destroy the septic focus. Employ antispasmodics, especially chloral in large doses. Isolate the patient, to secure absolute quiet. Give massive injections of serum, especially intravenously and subarachnoideanally.

There yet remains the question, of how one is to know whether he has prevented tetanus when he administers the serum before any symptoms have appeared. In a hospital epidemic, this would be easy, but there are none in these days. It is the same with the Pasteur prevention of rabies. It is claimed that thousands of deaths are being prevented by it; still just about as many deaths annually from rabies occur now, as there did before the Pasteur treatment, while the malady has not been any more prevalent among animals.

Dr. F. Twaddell, Summit, New Jersey, in the *Medical Record,* speaks very highly of the use of sulphuric acid in the treatment of furunculosis and pyorrhea alveolaris. He details several cases in which the results were surprisingly good. Some of the patients had been subjected to the usual routine treatment, including the use of autogenous vaccines, without result, but upon the internal administration of dilute sulphuric acid in thirty-drop doses three or four times a day there was a rapid improvement in every case.

Dr. H. H. Rusby of Columbia University thinks that it will soon be possible for the farmer to make his land 25 per cent. more productive by the use of radium, according to the *Indianapolis Medical Journal.* "One grain of this substance put in the ground would kill all vegetation for an acre around. In smaller quantities it stimulates, and we think it would be possible for the farmer to use it and grow on four acres what takes five. He will not need to renew the treatment as it will continue to be more and more effective."

OBSERVATIONS ON LACERATED AND CONTUSED WOUNDS.

By LUTHER SEXTON, B. S. M. D., of Tulane, New Orleans, La.

The most common wounds calling for treatment by the surgeon and practitioner in the country and smaller towns as well as the city are of the above variety, and such a radical change in their treatment and management has taken place, that it may be of interest to note the present, in contra-distinction to the past, methods of caring for such wounds.

These injuries are solutions in the continuity of the soft parts produced by a dragging force or trauma with blunt instruments, blows or tools. Infection with bacteria usually takes place at the same time the wound is produced through dust, oil, cinders, dirt or machinery grease, which are often ground into the tissue at the time. These wounds bleed less than the incised, because the vessels are torn or twisted, and the torn and irregular edges favors the coagulation of blood. The gaping or separation from such injuries are not so marked as in incised wounds, the tissue is often crushed and pulpified. The pain from such wounds is dull, throbbing and aching if the nerve is not divided, but if pressed upon near the crushed parts, the pain is continuous until the nerve is divided or released. From the above fact, contused wounds are more painful than incised wounds, but bleed less.

Shock is largely dependent upon the place of the blow, the sensibility of the patient, and the amount of crushing injury; in avulsion and crushing of bone of both limbs, as in railroad accidents, the shock may prove fatal. Healing in very slight wounds of this kind may take place without much inflammation. The separation between the tissue is filled with small coagulum or blood clot of fibrin, which acts as nature's sticking plaster, bringing the edges together; this fibrin forms a thin scab over the wound under which healing takes place.

The majority of contused and lacerated wounds, however, heal by second rather than first intention. The first desideratum in all these injuries, is to get rid of whatever infection that has been forced into the wound at the time of the injury, at the same time arresting any hemorrhage which may be present and approximating the parts as snugly as possible. It should always be remembered that reactionary hemorrhage may take place in lacerated or contused wounds when the temporary plug that stopped the vessel is blown out by reaction, or we may have secondary hemorrhage which may result from the sloughing tissue including the veins and arteries; hence it is important that all risks of hemorrhage from these sources be attended to at the first dressing. (H_2O_2) Hydrogen peroxide diluted half with sterile hot water, poured freely into such wounds with the flaps held up so that all the crevices of the wound may be filled, aids in boiling out the foreign particles of dirt and infection at the same time acts as a good hemostatic. The use of the peroxide of hydrogen at subsequent dressing may be questioned, particularly if delicate epithelium has begun to cover the wound; all applications should be very mild at this stage of healing. After washing out the wound with sterile water, all pulpified tissue and skin that is known to be dead from lack of blood supply or comminution had as well be removed with forceps and scissors, as to be left to slough and infect the wound later.

It is proper to state here that owing to the abundant blood supply to the hands and feet many apparently destroyed extremities have been saved by conservative surgery. The recuperative power of nature in mending these members should always be given a chance. You can amputate later if the member is destroyed, but you can never retrieve the mistake of amputating too early.

One of the means of *arresting hemorrhage* from these wounds, is by pouring an abundant supply of hot water into the wound, which acts by flushing out the foreign bodies driven into the wound, also constricting the blood vessels thus arresting hemorrhage. If these crushed wounds are over bony prominences, compression is better for arresting hemorrhage than by putting in unnecessary

ligatures which increase the risk of infection. Sterile gauze pressed into the wound as compress or held with firm pressure under digital compression, checks the average bleeding and pain within a short space of time. Where a larger artery is concerned a ligature or suture is required. Fingering in the wound with the hand, or further tranmatizing the tissue should not be allowed. Hamostatic forceps and tortion will help to control the smaller vessels better than ligatures which might carry infection. Chemical styptics have no place in the arrest of hemorrhage in these wounds, as they destroy all chance of union by first intention by the introduction of a foreign body into the wound so they are only mentioned to be condemned. Their use may be permitted upon malignant or sloughing wounds.

The treating of all non-operative wounds resolves itself into cleansing, not only the wound, but fixing the cells and epithelium, and cleansing as well the tissue adjacent to the wound, not by washing and scrubbing with strong soaps as formerly done, but by wiping rather than washing the wound with such substances as chemical solvents to the grime or grease, and always away from the wound. The grease or oil from a machine accident can best be removed by first applying the half alcohol and tr. iodine directly into and around the wound, then cleansing the wound by wiping away from its edges with sterile gauze saturated with turpentine, gasoline, ether or benzine.

The infection by this method is much rarer than when the injured part was scrubbed with soap and water, in a vain effort to cleanse a hand into which an accumulation of grit and stain has been ground in for months or years.

The preliminary painting of the part with alcohol and tr. iodine seems to destroy all the skin germs. If it is a hairy portion of the body that is injured it may be soaped and shaved away from the wound. Not only are all foreign bodies to be removed at the first dressing, but also particles of crushed bone if devoid of periosteum are likely to act as a foreign body and should be removed as should all other thoroughly dead tissue.

The future function of fingers have been greatly benefited by suturing divided tendons, muscles and nerves. It is best to slit up pockets of wounds, if necessary to gain entrance into crannies where foreign bodies may have been lodged; mopping out the thoroughly exposed floor of the wound with equal parts of tr. iodine and alcohol, placing gauze drains into the deeper recesses is a safe method against infections. The suture in such wounds should be interrupted and tied loosely, so as to hold the edges of the parts together and to admit of free drainage as this is imperative, particularly in large lacerated wounds. If the soft parts are not so pulpified as to make dead and living tissues look alike, a moist antiseptic drip from an irrigator over the injured part which is supported by a Kelly pad is a good procedure for from twenty-four to forty-eight hours, until it can be determined what can be saved and what is irretrievably lost. This drip should be kept warm and mildly antiseptic, a saline solution or large moist warm dressing may be substituted for this drip over the injured part.

The redressing, if the bandages are not much soiled, no pus or pain present, need not be repeated until the second or third day. The rule of dressing such wounds daily is a mistake unless they are infected, sloughing or very painful. Fever is the forerunner of general infection or cellulitis which occasionally follow such wounds.

When wounds are already seriously infected before they come to the doctor, which is often the case, the treatment by saline drip, 1-5000 bichloride or one-half of one per cent. carbolic, until all suppuration has stopped and inflammation subsided is to be followed by dusting powder of sub-iodide bismuth or one-half tr. iodine and one-half alcohol then covered by sterile gauze and bandaged.

The treatment of such wounds by pure carbolic acid followed immediately by alcohol to neutralize the acid has not been followed much as it is considered too heroic.

Co-aptation of the wounds are essential for their ready healing, a wound well sewed is half healed. All sutures should be put in loose to prevent tissue necrosis after the wound swells. Many times a gaping wound can be pretty well approximated by the Z. O. plaster. When it becomes necessary to use sutures, they should be interrupted and of silk worm gut if the wound is to be kept

moist all the time to prevent absorption before it is healed. We have used retention sutures to good effect where they held granulating edges together.

Draining from the most dependent part of the wound is very important. Stabbed wounds through the skin on opposite side of limb often facilitates the drainage. In these large wounds where the question of infection is not settled, primary drainage and secondary sutures, *i. e.,* sutures not tied when first put in but left loose to be tied when risk of infection has passed, and the drainage gauze removed. Gauze drains, rubber or perforated tubes may be used for first forty-eight hours to be removed at the second dressing of the wound.

Rest is next in importance to asepsis in these cases of injury, and to obtain it, it becomes necessary to keep the patient in bed, arm in sling, or limb or arm in splints. Immovable dressings that prevent muscular action reduce the amount of pain and promotes healing of the wound. All limbs with large lacerated wounds should be immobilized by bandages, splints or other methods.

The routine injection of 1,500 units antitetanic serum in all these lacerated wounds has become the rule in busy surgical clinics. Whether less tetanus is due to the injections of the serum, or to better cleanliness and dressing methods, it is impossible to say. The serum has no curative property after tetanus has developed, it is only supposed to be preventive.

The above methods have been applied in the largest clinics in the Charity Hospital for the past few years with the best of results and fewest infections.

Medical Building.

RULES FOR CONSUMPTIVES.—Acting under a law of 1912, the New Jersey State Board of Health has issued the following rules, which are to be followed by all consumptives in that state:

1. All persons suffering from pulmonary tuberculosis (consumption) shall effectively destroy their sputum (spit).

2. All persons suffering from running sores due to any form of tuberculosis shall burn all soiled dressings immediately after removal.

3. The room occupied by a tuberculosis patient shall have at least one outside window.

4. No person suffering from pulmonary or other communicable form of tuberculosis shall handle food designed for the use of others except when necessary in the performance of household duties, unless the food be wrapped in such a way as to protect it from contamination or unless some necessary subsequent process of preparation such as cooking will sterilize it and prevent its carrying infection to the consumer.

5. The manufacturing of any kind of foods for commercial purposes or the performance of any work known as "shop work" in the home of any person suffering from pulmonary or other communicable form of tuberculosis, is prohibited, unless the product is such as can be sterilized, and sterilization is done in strict accordance with the requirements of the local board of health.

WOUND OF BRAIN.—F. H. Gunn and F. C. Fairbrother, East St. Louis, Ill. (*Journal A. M. A.*), report a case in which the patient's head was literally split wide open with an axe in a fight. "The skull was severed back to the coronial suture and forward through the malar and superior maxillary bones down to the alveolar arch. The brain was severed about 1 inch to the left of the median line, through the frontal lobe back to a point near the fissure of Rolando. The left eye was cut through near the center. The patient was brought into the hospital, the head shaved and cleaned, the eye removed, the incision closed and secured with sutures and adhesives, and absolute rest enjoined." Perfect recovery followed. The patient returned to work in five weeks and up to the present, a period of three months, has complained of nothing but an occasional insomnia. The article is illustrated.

VACCINATION.

By D. L. FIELD, M. D., Jeffersonville, Ind.

Is vaccination immunizing and protective; or is it only a means of modifying and mitigating variola? Among some scientific and learned medical men there has arisen an opposition to vaccination. They assert that it does *not* protect, and, furthermore, it is to be condemned because, as they assert, it not only fails to immunize but introduces into the system a permanent and dangerous poison!

If the practice were still the innoculation with humanized virus, which was used from the time of Jenner to within the last thirty years, their charges against vaccination might have good grounds to sustain them; but since the day of bovine virus no such dangers can exist. There is surely no danger in anything coming through the pure blood of a young heifer! I have been employed to vaccinate "City Wards" on more than one occasion and I have never seen an unfavorable case. On the contrary the vaccinia was not serious and the arms did well—not an instance, so far as I have known, where perfect protection was not afforded against small-pox. To say that it is harmful to the system or that it may carry or develop serious diseases is not borne out by observation or experience. The great numbers who had small-pox, even when they had been vaccinated, must be charged to the *false security of immunized virus.*

Now-a-days no such mortality from small-pox, as was the case fifty years ago, can possibly occur again. I think there is no possible doubt that old-fashioned vaccination was, in a large measure, non-immunizing because the virus used was comparatively inert. Furthermore, there was too little caution used in selecting humanized virus; and injury to the subjects resulted. The fault was in the character of the virus used; its inertness so far as being immunizing and the practice of taking crusts from the arms of unhealthy persons. This is enough to explain why vaccination, as then practiced by careless operators, and with bad virus, failed to protect against small-pox.

There have been opponents to vaccination ever since the days of Jenner, just as there were prominent and violent opponents of innoculation by small-pox lymph.

The immunity afforded by the use of vaccine from *bovine* lymph elaborates in the human organism the *protective bacterin.* The used vaccine is a culture which, when introduced, increases the opsonic activity of the organism.

Dr. Eward Cato Seaton, of England, says: "Persons who have once been vaccinated are, as a rule, permanently protected against small-pox. A certain, and indeterminate proportion of vaccinated persons will, however, be liable at some period of their lives, especially under epidemic influence, to take small-pox in a mild, modified form. A very few will be liable to take it in a severe, disfiguring and fatal form. And the liability of *any* individual to take small-pox severely, after vaccination; and probably the liability to take it *at all* will be inversely as to the goodness, and amount of vaccination. On no subject is medical testimony more unanimous than on the very large immunity from attacks of small-pox which successful vaccination will confer.

Now as to the alleged dangers from vaccination. The physician who wishes to acquaint himself with all that has been brought forward on this subject, will find the fallacies of the various objections thoroughly exposed and the questions finally settled, in the history, by Mr. Simon, of the "Practice of Vaccination." No medical authorities, who have investigated the subject, believe in the transmission of disease, from one child to another, by vaccination. If a child has a predisposition to cutaneous disease, the febrile action of vaccinia may be an exciting cause of its manifestation. It will not be the result of vaccination, however. It would be only a coincidence. This is presupposing that proper virus has been carefully introduced.

Marson says: "Parents are unwilling to believe that there is anything wrong in their

offspring and when other diseases follow, vaccination is blamed for what is really and truly due to other causes." Seaton says: "Those who have had most to do with vaccination, on the one hand, and those who have been most concerned in the treatment of infantile diseases, concur in the non-communicability of disease by vaccination." Dr. Marson, who performed over 50,000 vaccinations has never seen disease communicated by the vaccinia; nor does he believe the popular reports about such communication. Dr. Paget in 26,000 vaccinations has never known disease to result from vaccination.

It has been demonstrated by both German and French physicians that lymph from the arm of a syphilitic child cannot transmit the taint through vaccination, to a healthy child.

I will close with the following from Dr. Simon: "Knowing the careless way in which vaccination has been sometimes carried on, and the ignorant hands into which its performance has sometimes fallen, I am rather surprised that accidents have not more frequently occurred." He stopped a druggist from vaccinating from a *sore*, which had none of the characteristics of vaccine lymph.

In the days of humanized virus, great care was taken to select only lymph from healthy children. Now it comes only from the cow.

THE NURSE AND THE EIGHT-HOUR LAW.—The eight-hour labor day as it applies to nurses is causing trouble wherever it appears. The labor unions that urge these laws and the legislatures that pass the laws utterly fail to comprehend the status and the work of the hospital nurse. They do not even seem to be impressed with the fact that the nurses have not asked to come within the protection of the eight-hour law, do not desire to be included within the ranks of the eight-hour workers, and, in some localities, have even petitioned legislators not to make idiots of themselves and pass fresh legislation at the behest of people who know nothing of the subject under discussion. The vast mass of the nurses who serve in our hospitals are not "working people" or "laborers" in either the common or technical acceptation of that term; they are not workers who are being exploited by some capitalist, who makes a profit out of their daily toil. They are students, who are paying for their education by working for the institution or community that is educating them. Their work is not along industrial or commercial lines, but is purely personal service—and personal service never has been classed with the various trades and occupations that have arisen from the introduction into industry of the factory system and modern invention.

"Factory laws" were necessitated by the early manufacturers imposing excessively long hours, laborious toil and monotonous work on their employes to the detriment of the common weal. Nurses do not suffer from any of these disabilities, nor has it been shown that the public has in any way suffered from the twelve-hour shifts of the nurses' working way. Interesting work that implies nothing of actual toil and marked by a pleasant variety of occupation makes the twelve-hour day short.

Again, the nurse has always insisted that her occupation is a profession and not a trade. There is no doubt but that this view is correct. It is difficult to see, therefore, how the courts could possibly justify the inclusion of a profession among a lot of trades, whose working hours could be regulated by law. If this is in accordance with American constitutional law, it will be possible in the future to regulate the working hours of attorneys, physicians, dentists, the clergy and social workers. The trouble with all of this eight-hour labor legislation—the great mass of which has been most beneficent and has tended to conserve both the health of the individual and the community—is that many of its earnest advocates have forgotten, if they ever knew, the original intent of this class of law-making, and are laterly attempting to divert its application to classes of the population and to situations to which it does not now and never has applied.—*Lancet-Clinic.*

COMPULSION NEUROSIS.

By F. B. Erwin, M. D., Wellston, Okla.

During the fall of 1912, a girl, age 15, came under my observation. She was very strong and healthy in appearance. She had just been married seven days and had had a "spell" as they termed it, and her husband believing her to be an epileptic had returned her to her former home and parents.

Her family history was negative as regards any nervous or mental diseases, so far as I was able to find out. The father had used some alcohol when a young man but had not used intoxicating drinks of any kind for several years before the birth of the child. The mother died when the girl was just an infant and the grandmother had taken care of the child until three or four years previously when the father had married again, and taken the girl to live with him.

A physical examination did not reveal any defects, with the exception of a rather peculiar expression of the eyes. Mentally she was a little above the normal. Menstruation regular and with very little pain. Her digestion was fairly good. An examination of the urine failed to reveal anything abnormal in regard to the kidneys.

These attacks began about three years previously or about the time her menstruation began. When they would appear she seemed to be almost oblivious of her surroundings. She would seem to be carrying on a conversation with some unseen person or persons. Between these attacks she was a very modest and unassuming girl but at these times she would be very rude in her actions or talk.

She would even go so far as to take up anything which she might get hold of and throw at those around her. These attacks came, as a rule, just before her menstrual periods.

She evinced considerable hatred for her father and seemed to think that he had something to do with her separation from her husband. I mention this fact to show that her separation from her husband did not now allow her to satisfy her sexual desire which was found to be the cause of the neurosis.

When questioned closely as regards her mental status at the time of these attacks she said that she appeared to go into a trance and be practically unconscious or at least to be unable to control any of her actions at these times. There appeared in her consciousness two girls. She could see them very plainly and they would talk to her and she could hear them. She always feared their coming for they taunted her and told her to do unpleasant and distasteful things which she could not resist doing, for she was absolutely under their influence and power as long as they remained in her consciousness. Therefore, she was always in great dread between these attacks on account of the possibility of their appearance at any time.

According to Freud, "Obsessions are transformed reproaches returning from repression which always refer to a pleasurably accomplished sexual action of childhood." These neuroses present doubts, obsessions and phobias. In this case she had a great fear of the reappearing in her consciousness of these two girls. With this fear in her mind it strengthened the thought of their returning and weakened her resistive power against their return, therefore making the possibility of their return oftener and more prolonged.

By means of the dream analysis and association method it was found that her sexual instinct had been very strong when a little child and as she grew older she was taught to repress all thoughts in regard to the sexual life. When the menstruation appeared the sexual desire was aroused stronger than ever and the transformed reproaches began to appear in her consciousness in the form of the two girls. The defense being broken down and she being unable to put up a defense which could force these reproaches again into the subconscious she developed this neurosis.

While I shall not go into detail as to the

psychanalytic method used in diagnosing and treating this case, as that would make the paper too lengthy, I do wish to make a few suggestions as to the manner, in general, in which I handled this case. By the methods before suggested, we endeavored to find the complexes which, according to the Zurich schools, "are ideas of marked emotional accentuation which are or were split off from consciousness and repressed into the unconscious." When these complexes are once found and discussed freely, as a rule, they clear up. She presented her dreams and discussed them quite freely at first, which is not always the case. However, when I would approach a complex she would refuse to discuss the subject any further for this time and I would leave her for the day. It is no use to try to force a person to talk at these times. Later on they will, as a rule, take the subject up and discuss it quite freely. It is not a quick or easy method, for a person may spend hours at a time, for days and sometimes weeks before the case is fully diagnosed and treated in this way. But persistance is one of the prime elements in this work so I continued to deal with her along these lines for several weeks when the attacks ceased and by a little training as to the right method of thinking she returned home in full possession of herself once more.

ALLEGED DECLINE OF THE PHYSICIAN.—We are hearing a great deal in these days from various sources, both lay and professional, about the decline in the professional status of the physician, especially of the family physician; and numerous are the explanations offered for the condition of affairs. By lay writers the fault is naturally laid with the medical fraternity; by medical writers it is just as naturally attributed to the laity. We are told that the modern medical man fails to keep step with the spirit of the times; that there is too much specialism; that there is undue commercialism; that fees are too high, and so on, ad nauseam. On the other hand, we are informed that the public is running after strange gods; that it neither knows nor cares to know anything concerning its own interests; that it is prostituted to patent medicines; and so on, again, ad nauseam.

For ourselves, we must confess we do not see that any such mutual recriminations are called for by the state of the case. There is, so far as we can see, nothing in the situation which is not accounted for by natural processes. The history of medicine, in this respect, is precisely similar to that of religion, to which it is a twin. Time was when the minister held, in the community and the home, an esteem which almost amounted to veneration. His lightest word in all matters of morals and conduct was law. His very person was sacred. One did not speak of "a preacher," but of "the preacher." So was it with the doctor in former times. He possessed the oracles of the physical law. He was the priest of a system of prevailing mysteries to which the layman had no initiation, which he regarded with corresponding awe and its minister with reverence.

But we have changed all that. The profession and practice of medicine is nowadays regarded merely as a division, for mere convenience sake, of the world's work; the physician as nothing more than a man among men, delegated to that particular branch of work by the public, by reason of his choice of occupation, and of his special training. The public specifies that training and dictates the conditions under which he shall be permitted to follow his calling. The general average of intelligence and knowledge among the laity is considerably higher than it formerly was; hence the doctor, like the preacher, is no longer the oracle that he used to be, nor, to be frank, is he needed as much as he used to be.

This is really all there is in the much-talked-of decline of the doctor's prestige. It does not imply that he has really lost any prestige or dignity. But he has been divested of the impressive cloak of superstition which used to envelop him, and now walks the street, literally and figuratively, in the garb of an ordinary man of affairs. He is no longer worshipped as a fetish, but is consulted as an expert. Who shall say that this latter status is not characterized by more genuine dignity and honor than the former? —*Brief.*

THE GENITAL LESIONS OF DIABETES WHICH SIMULATE VENEREAL DISEASES.

By CHARLES M. WHITNEY, M. D., Professor of Genito-Urinary Diseases, Tufft's College Medical School, Boston, Mass.

Diabetes as a constitutional disease is well known to every physician. That in its course it may cause lesions upon the genitals resembling venereal disease is not as clearly understood. It is the purpose of this paper to show that these various local manifestations may be mistaken for chancroids, primary lesions and syphilis as well as tertiary forms, gonnorhoea, balano-posthitis, abscesses, and also eczema, phimosis and oedema of the penis.

The following cases are cited to demonstrate these facts and to show how easy it is to overlook entirely the real cause; for, in my early years, I had no idea that such a condition was possible and that the patient was a diabetic was usually discovered by accident.

How many are constantly overlooked by every physician is problematical, of course, but it certainly well illustrates the fact that the urine of every patient, no matter what his ailment may be, should be examined for albumen and sugar. If this is done very many unpleasant surprises will be avoided.

It may be well to classify the cases for convenience of description according to the diseases which are simulated.

Chancre. It would seem that the primary lesion of syphilis has such striking clinical manifestations that it could not be simulated by anything else but that it may be by diabetes is shown by the following cases:

CASE I.—A man of 50, of irreproachable habits was seen through the courtesy of Dr. R. R. Culbert in May, 1908. He had considered himself in good health although somewhat overworked. Four weeks previous to our consultation, he noticed a small ulcer in the coronal sulcus on the left side of the penis. At about the same time, he observed a slight urethral discharge.

As the ulcer did not heal, he consulted Dr. Culbert about two weeks later. A slide was taken, but showed only mucus and a few leucocytes. There had been no coitus in this case. The ulcer had slowly increased in size but was not particularly painful.

As a matter of routine the urine was examined and found to contain three per cent. of sugar. He was at once placed upon a diet. At the time of my examination two weeks later an ulcer was present the size of a split pea. It was circular and clean-cut, there was but little secretion, and it was not especially painful to touch. The base was distinctly firm and almost characteristically indurated over an area much larger than the ulcer. The inguinal glands, however, were not palpable which would be very uncommon in a chancre. Except for this the lesion was typical of a primary lesion.

A smear showed no spirochetæ. In view of the patient's absolute denial of any venereal exposure, this case presented a most perplexing problem, and I confess to a doubt at that time of the patient's veracity. I saw him again in three weeks and he was somewhat improved and the urine was nearly sugar free. There was no roseola, no sore throat, no adenopathy, although about fifty days had elapsed since the appearance of the lesion and he had received no treatment except for the diabetes. The subsequent history of this patient showed clearly its non-venereal nature for the ulcer gradually healed as the urine became free from sugar, and at no time during the four years elapsing has there been the slightest evidence of syphilis. It is interesting to note that the slight urethral discharge disappeared within a few days as a result of a lessening of the sugar in the urine.

CASE II.—A man 51 years old, married, consulted me in September, 1907, for advice regarding an ulcer of the penis. There had been no suspicious coitus for two months. I found an ulcer on the under surface of the skin of the penis about an inch from the free border of the prepuce. It was circular, clean-cut, with very little secretion, and neither tender to palpation nor

painful. In spite of the long incubation, it was diagnosed as a beginning syphilitic chancre and the patient was placed under observation, the usual local remedies being prescribed.

During the next two weeks the ulcer slowly increased in size, and became more tender and painful. At the end of another week, however, very severe pain began and the tissues became swollen and in a few days the skin presented a dark slough the size of a quarter of a dollar. Then, for the first time, an examination of the urine was made and five per cent. of sugar was found.

Under a strict diet, and more soothing dressings, the ulcer began to improve, the slough came away and at the end of four weeks healing was complete. The inguinal glands in this case also were not enlarged. Since then the patient has been under treatment for his diabetes and has not presented any symptoms of syphilis.

Ulcer of Tertiary Syphilis.

CASE III.—Male, 48, single, consulted the writer in May, 1900, for an ulcer of the penis the size of a thumb nail, situated upon the left side of the penis close to the *corona glandis.*

This had existed for eight weeks, and had extended very slowly. It was rather painless and not sensitive. There was no discharge of any amount from it. The glands in neither groin were palpable. This had been diagnosed as a chancre, at one of the large hospitals, and he was being watched for secondaries. On close questioning he gave a history of probable syphilis fourteen years before, and because of this as well as from the fact that there had been no coitus for more than six months prior to the appearance of the ulcer, and from the absence of the characteristic induration, glandular enlargement, and secondary roseola, a diagnosis of tertiary ulcer of syphilis, the so-called "recurrent chancre" was made. He was given large doses of iodides and later red iodide of mercury in combination, but after six weeks of this treatment he was in no way improved. As he had lost some flesh and did not feel in good condition, a specimen of his urine was taken to ascertain whether it showed any renal disease, and it was found to contain four per cent of sugar. He was placed on a strict diet, his other medicines were stopped, as it was felt that his general condition was the most important. There was no suspicion in the writer's mind that the two conditions were in any way associated and it was therefore a matter of surprise to find that the ulcer slowly healed as the amount of sugar lessened until at the end of six weeks it was well. The proof of the causal relation of diabetes in this case is the fact that no treatment, local or general, was of the slightest benefit, and that when the sugar was lessened and the patient's resistance was increased the local lesion promptly healed.

Chancroid. Of course, this disease may occur in the diabetic and present nothing unusual in its course. The cases to be reported have been simple diabetic ulcers resembling chancroids in appearance only, but differing widely in the clinical course.

CASE IV.—A young unmarried man of 22 years, applied for advice in December, 1900. He had an ulcer of the free border of his prepuce which had existed for six weeks. A marked degree of phimosis was present which prevented any retraction of the prepuce.

The ulcer had evidently begun in a laceration of the mucous membrane during coitus, for it was of a V-shape, both sides being infected. There was no discharge, no induration, and no glandular swelling. Its general appearance and the inoculation of contiguous surfaces suggested very strongly an indolent chancroid. Because of its situation and the marked phimosis a circumcision was advised and the arrangements were partly made when, by a happy thought, the urine was examined and a large amount of sugar was discovered.

The advice was very quickly changed and in ten days the ulcer healed under diet and simple ointment of boric acid.

Inasmuch as deaths have been reported from circumcision done in diabetic cases the writer was exceedingly grateful that his case was not added to the list of catastrophies. The patient died in two years of the disease, but presented no further ulcers.

CASE V.—A woman 40 years old, married, consulted the writer in August, 1901, for vaginal discharge which had appeared a month previous. On examination, the uter-

us was greatly prolapsed, the cervix almost protruding from the vagina. Upon it were four ulcers, one the size of a copper cent, the others much smaller. All of them were red and inflamed, the edges ragged, the bases uneven, and there was marked discharge which had irritated the whole mucous membrane. A smear was negative as regards gonococci. There was no pruritus vulvae, nor were the glands anywhere enlarged. Various applications were made but no progress was noted.

Their true nature was not even suspected, as they resembled chancroids so closely, until the patient happened to complain of thirst about three weeks after the first visit. The urine was examined and found to contain three per cent. of sugar. The ulcer quickly healed under diet and mild local applications, and had not recurred up to a year ago when this patient was last seen. The fact which was observed in these two forms of ulcer was that the inguinal glands were not enlarged as they would have been in either chancre or chancroid, and this should be kept in mind when seeing an ulcer without the usual lymphatic changes in the adjacent glands. It may be a clue which will lead us early to a correct diagnosis. Although not directly bearing upon the subject, it may be interesting to note that I have seen several cases of both chancre and chancroid in known diabetics and they have followed their usual clinical course apparently affected in no way by the constitutional disease.

CASE VI.—W. P. 22, married, came to the clinic on July 22nd, 1910, with a profuse purulent discharge and a series of small ulcers in the coronal sulcus.

These resisted treatment and did not heal until August 29th. On August 18th, 1911, he again appeared with two small ulcers upon the inner surface of the prepuce which had appeared one week after coitus.

These were treated in the usual manner and were apparently well on September 2nd, but three days later they had returned at the same places. He was first seen by the writer on October 3rd, and many applications were tried, especially iodine which was then being used out, and while these ulcers would almost heal over they would return in a few days as large as ever. There was no induration, no history of syphilis in the past, and the inguinal glands were not enlarged.

On October 27th, bearing in mind the other cases already cited, the urine was for the first time examined for sugar which was found present. Under proper diet the ulcers promptly healed and have not recurred.

Gonorrhoea. A purulent urethral discharge of moderate amount, is not very commonly seen in diabetes, but it does occasionally happen, as for instance, in the case of ulcer cited above.

When it is present it is of the muco-purulent type, being rather scanty in amount, and is a chemical urethritis due to the glucose in the urine. There is no dysuria and the symptoms quickly subside under diabetic treatment. Occasionally, the symptoms are more severe and when associated with phimosis may easily be mistaken for gonorrhea. The following cases were of this type and in both of them I failed to diagnose the true condition at the onset of the symptoms.

CASE VII.—A man 56, married, liquor dealer, reported in March, 1906, for the treatment of a profuse subpreputial discharge.

He strenuously asserted that there had been no extramarital coitus. On examination phimosis was present, the prepuce was markedly swollen and reddened, and from the orifice there was a very profuse discharge of pus. The meatus could not be seen. A slide was taken but showed only the usual myriads of organisms peculiar to balano-posthitis. No gonococci were found. Nevertheless, it was considered most probably gonorrhea and was treated by oil of sandalwood and a subpreputial injection of permanganate of potassium. He did not visit me again for six months and at this time stated that the former symptoms had quickly subsided and there had been no return until within a few days. The case now showed a lesser degree of phimosis, a slight sub-preputial discharge but none from the meatus which now could be seen.

At this visit, he complained of some loss of flesh and strength, a moderate thirst and on examining the urine I found what I should have discovered before, that he had diabetes with about four per cent. of sugar. Diet and mild wash cured the local symp-

toms and there was no return until his death of gangrene of both feet, a year ago.

CASE VIII.—A man of 45 came to me in January, 1909, with the history of a relapsing sub-preputial and urethral discharge of fairly profuse character. He was married and had never had and venereal disease.

His wife was perfectly well and had no local symptoms. His case was much like the previous one, a moderate phimosis with purulent subpreputial discharge and a little from the meatus but showing no gonorrheal organisms.

He was given symptomatic treatment on his first visit, the true nature not being suspected, but on the second visit the previous case came to mind and his urine was examined and two per cent. of sugar was found. Since this case, it has been the writer's custom to examine the urine in all similar cases and in two more cases it has been found to contain sugar, but in very many more it is absent, the cause being local.

Very many cases of gonorrhea have been observed in diabetics, and while the course may have been a little more protracted than the ordinary case, it was not notably so.

Balano-Posthitis. This symptom is one of the most frequent of those produced by diabetes upon the genito-urinary organs and it is about the only one mentioned by the text books on the subject.

It is analogous to the pruritus vulvae which is so often an early symptom in women. It appears different in no way from that produced by other causes, but its occurrence in men of middle age with no venereal history should lead at once to a suspicion of its true cause.

CASE IX.—A man of 65 years, who had diabetes for several years, came under my care in December, 1902. His most annoying symptom was an itching and burning under a rather tight prepuce. When this was retracted the mucous membrane was found to be fire red, exquisitely sensitive and small ulcers were scattered here and there over it. This was relieved by antiseptic washes and stearate of zinc, aided by a strict diet. He was under my care until his death in 1907, and these attacks recurred whenever he was careless about his diet, and his sugar content went above three per cent.

Sometimes the ulcers in such cases are very deep and a few cases of gangrene have been reported.

Phimosis. While diabetes may occur in an individual who has a congenital phimosis, that which is usually seen is the inflammatory form, produced by the condition just described, balano-posthitis.

It is rare in the very young, but in all adults the urine should be examined in every case where a circumcision is advised lest the very great disaster of gangrene and death should result, as it has done in the past. A phimosis may be present, inflammatory in type, due to retained smegma, to chancroids, to herpes, or to vegetations and have no causal relation to a diabetes which is present, but when any operation is done the resistance of the diabetic is so slight that his condition after an operation may be far worse than before it.

Eczema of Penis. This is next in frequency to balano-posthitis and usually is of the dry and scaling form. It often closely resembles a squamous lesion of syphilis as the following case shows:

CASE X.—W. R. 52 years, single, reported in April, 1905. He acquired syphilis a year before but had been under the care of another physician and had reacted well to treatment so that he showed nothing on his body or upon the mucous membranes. An examination of his urine showed that it contained neither albumen or sugar. During the next three years he remained under treatment and showed an occasional squamous lesion of the forehead and scalp which cleared up quickly under mild mercurial ointment. At the end of this period a large squamous patch appeared upon the right side of the scrotum, sharply defined from the surrounding normal skin.

It was so typical of a late skin syphilide that I had no doubt whatever of its character and instituted more vigorous treatment with mercury and iodides with local mercurial ointments of mild form.

This did not result in the expected improvement and because of this and a moderate thirst which appeared at about the same time his urine was examined and three per cent. of sugar was found. Under a strict

diet and soothing ointments the lesion disappeared but during the two remaining years of his wife would constantly recur when his sugar content rose above two per cent.

This lesion was clearly diabetic and not syphilitic, because treatment for the latter condition never affected it in the silghtest degree.

CASE XI.—B. F., 68 years of age, married, was sent by his physician on November 27th, 1912, to my clinic for advice. He denied previous venereal diseases, and extra marital coitus. About six months before he stated that he had used a towel previously used by his wife, who had eczema, to wipe his penis. One week later he noted an irritation of the prepuce with later swelling and an inability to retract it. He had received various forms of treatment but had steadily grown worse. At the time of his visit the skin of the anterior portion of the penis was covered with a scaling eruption, the tissues were swollen and tender producing an inflammatory phimosis. Several fissures were present at the free border of the prepuce which closely resembled chancroids. The inguinal glands were not enlarged, and the skin and mucous membranes elsewhere were normal. A provisional diagnosis of a diabetic lesion was made which was confirmed by an examination of the urine which showed sugar in large amount.

CASE XII.—C. K., 47, single, consulted the writer on November 25th, 1912. He acknowledged several attacks of gonorrhea but denied any other venereal disease. His present ailment began one day after coitus and had existed three weeks. The skin of the penis showed a scaling eczema of one side, with moderate swelling of the tissues and at the free border of a rather tight prepuce were two small ulcers or fissures. The inguinal glands were not palpable. From the length of time these had existed without growing larger and from the peculiar appearance of the patch of eczema a provisional diagnosis was made of a diabetic lesion which was confirmed as in the previous case by finding a large amount of sugar in the urine.

ABSCESS OF THE PERINEUM.

CASE XIII.—J. O., 58, married, was seen in consultation with Dr. F. W. Stuart, on March 19th, 1912. For a week previous he had pain and swelling in the perineum with slight elevation of temperature. On examination a hard, brawny and tender mass was present in the perineum extending to the scrotum. There was a history of a stricture which had been dilated on various occasions by different physicians. He was a constant user of alcohol and also had a myocarditis. He was admitted to the Grace Hospital, where he was operated upon by the writer on March 22nd. A median perineal incision was made and pus was found rather deeply situated. The urethra was opened upon a tunnelled sound and a stricture of the deep urethra of 19 calibre was divided. The finger and a sound both entered the bladder easily. In attempting to pass a larger instrument through the penile urethra it entered a pocket.

The incision was carried forward until the end of the sound in the pocket came into view, making a most excellent demonstration to the students present of the effect of a false passage in the use of sounds. The walls of this were split up and the sounds could then be passed with ease. At the time of his entrance to the hospital he was found to have four per cent. of sugar present, but before operation it seemed most likely that his abscess was due to a deep stricture of small calibre with resulting infection of the tissues, but with a better knowledge obtained under ether, and by the operation it appears to have been due indirectly at least to diabetes for a stricture of 19 calibre was not sufficiently contracted to cause this condition under ordinary conditions of healthy resistance. The wound healed very slowly and the amount of sugar remained between three and four per cent. in spite of a restricted diet.

He died suddenly on March 23rd of cardiac dilatation. The wound was nearly healed and he was preparing to go home on the following day.

EDEMA OF THE PENIS.

J. S., 47, married, colored, was first seen on October 20th, 1906. He gave a history of gonorrhea at 16 years, and a vague one of chancres later. These were not followed by constitutional symptoms. Eight weeks before his visit he noted a marked swelling

of the penis especially along the under surface, and this had resisted all treatment which had been prescribed for it. On examination the penis was found moderately swollen, especially on its lower surface, but not tender. There was no urethral discharge and aside from the swelling the penis was normal. The glands were not involved. Heart, lungs and abdomen negative. Legs not swollen. Urine contained no albumen, but about three per cent. of sugar. Under diet the swelling disappeared in three days and had not recurred up to the time he was last seen, about two years ago.

These cases and other similar ones which have been observed by the writer show very clearly that in diabetes there may be various lesions upon the genital organs which closely resemble those of venereal origin. Whether they are caused by the direct irritation of the sugar in the tissues or blood current or by the lessened resistance to bacterial invasion is a matter which is not yet understood. But whatever may be the cause, the result is the same and their chief interest lies in the fact that they may be easily mistaken for venereal diseases. If such is the case the treatment for these diseases will surely not prove of value, because the cause is not removed. As has been already stated, in known diabetes many forms of venereal diseases have been noted, but their course was not markedly different than it is in these who are not diabetic, although ulcers may be a little slower to heal. And of course it also follows that not all lesions in patients who have sugar in the urine are caused by it. But when such a disease is not typical in its history, its course or its reaction to treatment, and when it recovers under systemic and dietetic treatment alone we recognize then its causal relation. It is to call to the attention of the medical profession the possibilities of this disease that these cases are here presented.

386 Commonwealth Avenue.

CORPORA LUTEA.—F. Fenger, Chicago (*Jour. A. M. A.*) makes a preliminary report of his investigations as to the differences in size and chemical composition of the corpus luteum of ovulation and the true corpus luteum of pregnancy. The active principle of the gland has not been isolated, hence it is difficult to standardize the drug for medical purposes. He has examined a total number of 310 of corpora lutea from non-pregnant animals and 692 from pregnant cows. The color and shape of the two are identical so that external appearances go for nothing. The tabulated results are given and show that the corpus luteum of pregnancy is larger, and more variable in size. There are also given in the same table the analysis of the desiccated fat-free glands—determination of the moisture, ash and total nitrogen and total phosphoric acid, and it is noted that the nitrogen and consequently the protein as well as the phosphoric acid ratio is slightly higher in the non-pregnant gland but the slight difference is of hardly any significance as regards their therapeutic powers. The active principle is undoubtedly present in the glands in organic combination and closely associated with the protein complex. Fenger also reports some rather interesting observations made in examining the uteri of pregnant cattle which, as he says, demonstrate clearly when the fetus dies during gestation the uterus is itself capable of disposing of it by a sort of digestive process and by other means than by simple abortion.

Acute flexion is the best position in which to dress elbow fractures through the humerus. Care must be taken, of course, to avoid skin decubites and obliteration of the radial pulse. *Early* passive motion is highly important.—*American Journal of Surgery.*

Miss Winifred Holt, daughter of the publisher Henry Holt, is the heroine of "People of the Night," a paper that will appear in the July *Century,* telling about the splendid work that is being done by the New York Institution for the Blind, of which Miss Holt is the founder and guiding spirit.

THE SIGNIFICANCE AND EXPLANATION OF SEXUAL DREAMS.*

By Moritz Porosz, M. D., Budapest, Hungary.

A dream is the consequence of an unbridled, wandering phantasy. Although as illogic and unsystematic a thing as a dream appears to be, yet Freud has succeeded in evolving a system into which it may be fitted, in fact he has discovered a certain logic to apply to it.

It it unquestionably true that a dream-picture corresponds to a reflection-image. The picture is not clear in every detail, for associated with it are distortions, exaggerations, unequalities, reductions and enlargements, but just as one could not see a mirrored image unless one placed an object befero the mirror, so is reflected the trend of the mental processes within the borders of the dream-picture.

This fact has been confirmed through my experiences.

Within the narrow limits of my specialty I often have had the opportunity to become acquainted with sexual dreams. The dreams themselves have not engaged my attention, of course, as much as have the pathophysiological effects accompanying them. These effects are the involuntary pollutions.

These pollutions, serving as a sort of safety-valve, resemble coitus quite closely in maintaining a sexual equilibrium. The sensations accompanying the act—an awakening of desire, a feeling of voluptuousness, and ejaculations, are easily to be compared with those sensations accompanying the longer prolonged actual sexual act. Also, after such so-called physiological pollutions the reduction of tension of the seminal vesicles can not only be subjectively felt but also objectively demonstrated.

As a rule the dream-images, which are a feature of the so-called physiologic pollutions, represent the conception of a normal coitus of ordinary length. Curiously enough, but it very often happens that certain factors involved in normal coitus, such as certain preliminary courting, the employment of persuasive eloquence, and even the physical overcoming of objection on the part of the female partner, form a part of the dream accompanying the emission.

If involuntary emissions are repeated as a consequence of a pathological cause (after abstinence, onanism, etc.), and if they occur frequently, then the duration of the accompanying act, paralleling the frequency of occurrence, becomes shorter; precipitate ejaculation becomes the feature of the dream-image. This rapid ejaculation occurs in the period immediately following intromission, often during, and later on even before the act of entering. Upon appearance of the potential disturbances then the dream concerns itself merely with the consummation of a sexual engagement. Later on the dream-picture does not go even so far as this, but, on the contrary, the most simple love-making or agreeable and pleasant looks, or simply just a pleasing conversation may suffice to cause the afflicted one suddenly to have an ejaculation. Finally I wish to mention the ejaculation without a dream, which, in fact, may even occur without erection. With the last two, only the ejaculation found in the morning upon wakening indicates the occurrence of the night.

In a former work* I expressed the view that such changes take place in dreams of this character. And at this time I alluded to these changes as marking the progress of prostatic atony. The symptom-complex has engaged my attention more and more, and I observe by study of the dream-images of patients suffering from atony of the prostate gland that the supplied data furnished by various patients showed that a certain governing law could be evolved.

Under the influence of treatment nocturnal emissions without dreams could be transformed into pollutions with dreams, this marking a distinct progress in the disorder.

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*Reprinted.

*Sexuelle Wahrheiten: *Verlag von W. Malende, Leipzig* (15 *Druckbogen*).

Such improvement begins with, for instance, the seductive talk of a prostitute or even conversation with one. Later on, as the case progresses, there are views of bathing women or the surreptitious sight of a woman dressing herself, or kissing and hugging in the dream-picture, these being the accompanying phenomena of the emission. Then later on making a still further advance, ejaculation took place at the moment of beginning coitus, and then following in turn came dream-picture after dream-picture reaching clear to coitus with quick ejaculation, and then, at last, the dream widens out into a complete act of intercourse of normal duration. And, finally, after full cure of the condition, the patient awakens after a complete sexual dream and fully completed coitus without, however, being able to find a single trace of ejaculation. More plainly put, whilst the coitus-dream was actually experienced yet ejaculation did not occur. If one closely observes the phenomena of these dreams then one can positively follow the operations of the sexual mechanism. I was particularly surprised at the circumstance that coitus or attempts at coitus, as they actually are performed in the waking state, were faithfully reproduced in every detail in these dreams.

What is the cause of the peculiar characteristics of these dream-images? The spontaneous *libido*, or that awakened through possibly unnoticed causes, operates in the waking state with such positiveness that the reminiscence and the origin of the resulting phantastic dream then take their beginning. In dreams the thoughts pass in review, as it were, without disturbance and more quietly.

Concerning the course of such thoughts Freud's classification is in entire agreement.

The cause of a psychological pollution-dream is to be found in an organic bodily condition. Usually the fullness or distention of the seminal vesicles serves as an irritant. During sleep the force of tension of the filled seminal vesicle exerts a definite influence as an irritant. Patients attribute the dream to lying prone upon the back, and in such a position it is true that the normal reflex activities operate to best advantage. The touch or weight of the bed-clothes, or tension caused by disarranged night-clothing, serve as irritants to the heightened sensibility of the erect penis. Thereupon a torrent of thoughts appertaining normally to sexual excitement runs riot. Then, just at the moment of ejaculation, there is woven a phantastic picture, clearly adapted to the occasion, made up of vividly lined happenings occurring with kaleidoscopic quickness. These phantastic thoughts furnish the psychical irritation through the operation of which there comes irritation of the reflex centers—pollution ending the operation of the processes involved.

But against this explanation is apparently the fact that emissions may take place without erection, under circumstances marked by rapid ejaculation. In this case it would be expected that ejaculation, in consequence of the shortened period of the irritation at work, would be delayed. It may even happen that the dream accompanying pollution is in such a stage of inception (for instance, hugging), that its psychical irritant action could only be minimal, and yet ejaculation occurs promptly.

Still less comprehensible is the fact that ejaculation can take place even without erection or dream. In such instances it is the reflex action exerted by the distended seminal vesicles producing irritation upon the ejaculation-center, which causes the ejaculation.

All of this can be explained if the defective mechanism attending prostatic atony be taken into consideration, it depending upon the resistance of the sphincter spermaticus, the muscle closing the seminal vesicle — as demonstrated by myself — whether pollutions take place rapidly or more slowly. The dream-picture corresponds to these irritation-sensations.

Just as before treatment it is possible to gather a connected account from the patient which can be interpreted as meaning an increase in the prostatic atony, in similar manner is it possible, after the institution of treatment, to determine a picture of an opposite character—improvement in the delay of ejaculation, increase in the number of incidents leading up to precipitation, with a kaleidoscopic change in the incidents making up the entire dream-picture.

More plainly put, as the physical condition of the prostatic tissues improves, in like measure, does the dream-picture take on a more complicated character. Although

this may appear as somewhat difficult to believe, yet the reader is assured it is true.

This may also be noticed in other dream-pictures. Thus, for instance, Hildenbrand describes a long dream in which a serving-maid comes into a room carrying a tray of plates. Hildenbrand saw the girl come in and admonished her to be careful lest she drop the plates. At the end of a rather long conversation, the girl stumbled over the door-sill and the dishes fell to the floor with a terrible crash, breaking into a thousand pieces. He heard the crash very plainly, the girl raised herself from the floor, and then to his great astonishment, he heard the crash again. Thereupon he awakened. Only then did he realize that the loud crash of breaking plates was the ringing of his alarm clock.

One of my patients who always paid the closest attention to his dreams, dreamed once that a young lady who had been his betrothed for a long time, but who, finally, grown tired of a drawn-out engagement, because engaged to another young man, said to him reproachfully, "Why do you play the part of an en-en-enemy?" repeating this over and over again. The usual tone of voice and the unintelligible question surprised and displeased him very much. The displeasure of the dream roused him and, half-awake, he again heard the words—and even again although he was fully awake. It was summer-time, and upon the sill of the open window were some cooing pigeons, the sound of which in his dream he had interpreted as the voice of the young woman.

How it is that a dream corresponds in the period of its unfolding, in the conversation of the principals, to the external irritation, cannot be satisfactorily explained.

A peculiarity of these mental phantoms, according to my observation, is the occurrence of a dream, after the prostatic atony is cured and other symptoms have disappeared, which entirely resembles that experienced by normal persons. This is a dream in which the person experiences every incident of coitus, from beginning to end, except ejaculation.

This I may explain through a restoration of the normal tone of the sexual mechanism, through which is built up a strong resistance not easily overcome. The irritation produced by the dream is not able to break down the new resistance. In this case I am disposed to attribute a psychical origin to the entire dream-phantom which a purely physical origin does not sufficiently support, that is to say, the tension of the distended vesicles is not so marked but that it may, dispensing with the missing bodily irritation, in the presence of an irritation of a purely psychical character, sufficiently prepare the ejaculatory center for the performance of its function.

But this is not a simple, unimplicated phenomenon. Very closely related or in fact, perhaps identical, is the dream of a micturition already begun, but which, however, in fact, is not urination. The distended bladder suffers a sense of pressing fullness, a local physical irritation. If this sense of fullness lasts a considerable period or even increases in intensity, then it gives rise to the mental processes usually accompanying an overfilled bladder. Perhaps, as a dream of desire it proceeds to completion. There is but little difference between experiencing the sensation produced by the irritation and the beginning of the act. But the sphincter muscle has sufficient tone to resist being overcome, and so, in spite of the dream which associated itself with the sensation of distention, the actual performance of urination does not take place.

In similar manner, desire excites a sexual dream. Sexual thoughts follow a feeling of desire, and *vice versa*, sexual thoughts can give rise to desire. Thus, even certain events or subjects can, through the medium of the sexual thoughts, arouse an urgent desire. Looking at a bed or divan—as I have already described—may arouse such *libido* as to lead to masturbation.

The same holds good in a dream. Desire brings about the customary thoughts; also the actual accomplishment of the performance pictured in the thoughts takes place. This is the explanation of masturbation taking place during a dream. In the waking state masturbators are in the habit of following desire with masturbation. The associated sensations have a subjective existence, and ejaculation may take place without onanism being actually practiced.

There are many patients suffering from nocturnal emissions who dream of such pol-

lutions when in fact the pollution has preceded the dream.

I often had the opportunity to demonstrate the truth of an observation of mine that a dream-image is often associated with the act of coitus conducted in an unusual position.*

In several instances I was able to show that a dream of coitus being conducted in the standing position occurred with persons who really had copulated in this manner.

A tall young man dreamed that his sweetheart sat upon a low bench. Kneeling before her, he confessed his love and then upon the woman assuring him that she looked upon his declaration with favor, he had intercourse with her kneeling. Therefore I ventured with a feeling of sureness to suggest to him that he already had attempted to copulate in this unusual position. The patient then admitted to me that once on a train, rather than wait for a more favorable opportunity, he had really had connection with a chance acquaintance, kneeling before her.

In another case, a boy of 20, the circumstances of the dream are that lying by the side of a man, the patient is sexually excited and has ejaculation. Upon questioning him, the boy confessed that, as a fact, he had slept with a man and had been corrupted into sexual practices. These embraced mutual masturbation and later mutual coitus *per os.*

In a fourth characteristic case, the patient dreamed during pollution that he was pressing himself against the leg of a young girl. Upon pressing him, the patient confessed that during his boyhood years, he had actually excited himself to masturbation in this manner with a 10 or 12-year-old cousin.

A 24-year-old man. who had never in his entire life copulated, and whom I had treated on account of impotence, on three different nights had had a pollution-dream in which he saw a horse suffering severe punishment. Once he was riding the horse himself, another time another person was riding, and on the third occasion it was a coachman who was belaboring the horse with his whip. In his youth he was gentle and tender and always had been a great lover of animals. If on the road, he saw a horse fall, he would hasten from the scene. The punishment of animals had a frightful effect upon him. Once, as he was about 10 or 12, his family went on a visit. The horse they were driving refused to cross a bridge. Thereupon the father laid his whip on the horse and punished the animal most severely. His heart went out to the poor beast. Whether this scene aroused a sexual desire within him, the patient could not remember, but it is probable, according to the dreams, that this actually took place.

Another patient saw in a dream, during which ejaculation took place, the following picture: Two dogs were coupling; the male had a piece of plaster on its penis to cover an ulcer. It seemed as if their efforts were difficult. For this reason, the master of the dog carefully gave his assistance in introducing the penis into the vagina. At this juncture pollution took place with the onlooker. On another occurrence of similar character neither pollution nor sexual excitement took place at all. This patient kept no dogs and had never been interested in them in the least.

The exciting cause of this impossible dream was the following incident: The patient had a paraurethral abscess in the sulcus coronarius which was infiltrated, but which, a day or two after incising, I had covered with a small piece of plaster. The erections which occurred at this time were painful, and during such a painful erection while asleep, pollution took place. I know many such cases as I have given above.

I do not want to give the impression that all pollutions are produced only by atony of the prostate, that is, a weakness of the spermatic sphincter muscle, for I have also seen cases of a purely central origin. Thus, one of my patients described to me that pollutions took place with him without an erotic dream. He dreamed of exciting circumstances, for example, difficulties in his business, or of hastening to the depot fearful that he would miss the train, or maybe he dreamed that he was having great stomach distress by reason of some forbidden article of diet which he had eaten. These dreams pointed to a permanent irritation in the spinal column, and the future fate of the gentleman held for him, just as I had feared, the onset

**Zur Klärung der Homosexualität und Perversität. Zeitschr. fuer Urologie.* 1908.

of the clinical symptom of tabes in a year and a half.

In the case of secretive patients, I am in the habit of turning these experiences to good account in order to secure an insight into their sexual lives.

If the pollution-dream involves coitus of normal character and duration, then the physician may be sure that the cause of such a dream is not prostatic atony. *In the majority of instances sexual dreams are not responsible for the pollution, but are merely the accompanying phenomena,* just as the highly excited state immediately preceding coitus is not the cause of precipitate ejaculation, but is a symptom of prostatic atony. The immediate cause in both instances is the increased, easily released *libido.*

If we but analyze sexual dreams, we can then easily learn the full sexual condition of our patients. To interpret the significance of such dreams is of the utmost service to the patient and also physicians themselves may learn much from such deductions.

Palmer Findley in the *Medical Herald,* gives an interesting account of his experience with the Abderhalden test for pregnancy. He says:

While in the great majority of cases where doubt exists we can rely for our safeguard upon the time-honored custom of awaiting future developments in the full assurance that in the course of time the diagnosis will be made clear, yet there are occasional cases in which it is not only advisable but mandatory that a diagnosis be made with little delay. In such instances we call to our aid every possible means of diagnosis and it is in just such cases that the serodiagnosis of pregnancy promises to be of very special value.

The observations of Abderhalden throw light upon the method by which the animal body protects itself against foreign bodies introduced into the blood. He finds a metabolic reaction, in that ferments are found in the blood plasma as the result of this reaction. It has been long known that foodstuffs taken into the body are variously altered by ferments in the cells of the digestive glands, and that substances introduced into the digestive tract requiring digestion do not enter the blood under normal conditions.

Abderhalden has demonstrated the presence of a ferment in the blood plasma of the pregnant woman, a ferment which has the power of digesting placental proteins into soluble peptones and amino acids. He finds this ferment to exist from the sixth week of gestation to the fourteenth day of the puerperium. It is further observed that this ferment is specific in its action, that it will only digest placental proteins. Placental extracts injected into the blood of the male animal develops this ferment in the blood plasma. This ferment is not developed in the placenta but is elaborated in the blood as a protective agency against the presence of deported chorionic epithelium.

Assuming that Abderhalden's observations are correct as applied to placentation we may expect further developments in other lines as, for example, in malignancy where cancer cells and sarcoma cells enter the blood, and we have the statement from Abderhalden and other observers, that a specific ferment exists in the blood of cancerous patients which will digest cancerous proteins, of sarcoma patients which will digest sarcoma proteins, that these ferments are specific in action and will digest no other proteins. Sufficient observations have already been made to warrant the hope that we have a means of early recognizing malignant growths by means of a biological test similar to that of pregnancy.

The test will be found of special value in cases of suspected abortion where temperature or hemorrhage exist, in ectopic pregnancy, in amenorrhea, in nursing mothers who are suspected of being again pregnant, in medico-legal cases, and in the differentiation of pregnancy from fibroids, ovarian cysts and subinvolution of the uterus associated with amenorrhea.

The risks of pylorectomy can be reduced by performing it in two stages—first the gastroenterostomy, later the resection.—*American Journal of Surgery.*

ABSTRACTS

ETHER-OIL RECTAL ANESTHESIA.—H. Clifford Luke, anesthetist to St. Lukes, New York, according to the *Medical Record,* states that though the results here, in the hands of experienced anesthetists, have been variable, some praising, others disfavoring the method. There are some theoretical objections, however, to the procedure. The usual technique is as follows:

Effort is made to thoroughly cleanse the intestinal tract, especially the large intestine, beforehand; a hypodermic of morphine, sometimes in combination with atropine or hyoscine, is usually given one-half hour before injecting the ether; the mixture of ether and oil (olive oil being mostly used), containing about 75 per cent. ether in adult cases, is given in a single dose of six to eight ounces by volume very slowly through a small catheter into the lower bowel. This is injected about thirty minutes before operation, the patient being in bed until the unconscious state is reached. If surgical anesthesia is not obtained in thirty to forty minutes, more ether is injected per rectum or administered for a brief time by inhalation.

The advantages of the oil-ether method outside of its simplicity seems to be more apparent than real. In fact, with the possible exception of selected cases of bronchoscopy, it is difficult to see any indication for its use that cannot be as well and probably more safely met by the modern pulmonary methods. Its chief advantages are said to be found in surgery of the head and neck, since there is no hindrance to the operator in the way of anesthetic apparatus. The ordinary intratracheal catheter could not inconvenience the surgeon much, either, and the intratracheal method offers a much greater margin of safety to the patient, especially in surgery about the face, mouth, and neck for several reasons; first, because it affords an efficiency protection against pneumonia of the aspiration type; second, because it provides a delicate and even control of the ether dosage, enabling one to maintain a very light narcosis, and establish the coughing reflex at the close of the operation; third, it further conserves the patient's vitality by providing perfect aeration, thus obviating any possibility of obstructed breathing or necessity of packing of the throat, with the use of nasal tubes. Another advantage is said to be the very quiet type of anesthesia produced, which is common in any method where there is a free air-way. But it must be remembered that most patients profoundly under ether behave in this manner. In a good ether anesthesia the depth of narcosis is intelligently and gradually varied to meet the operative requirements during the different stages of the operation. This would appear to be possible only when the dosage is under direct and definite control.

In conclusion he offers for consideration the following undesirable clinical features which must certainly be looked for in a method involving so many theoretical objections:

(1) The rather exhaustive and unpleasant experience accompanying any special rectal preparation, as required here; (2) the occasional necessity and inconvenience of preliminary and subsequent proctoscopic examinations, as a matter of safety and caution; (3) occurrence during the induction period of cramps, with distressing sensations of fullness and pressure in the lower bowel, accompaned by desire for stool; varying degrees of anal irritation occurring early or late; (4) prolonged induction stage with frequent necessary recourse to the inhalation method; (5) any time after the first fifteen or twenty minutes' respiratory depression may rather suddenly or slowly appear, followed by arrested breathing, loss of muscular tone and diluted pupils, with the possibility of fatal syncope and supervening; (6) the occurrence of mild to very severe grades of proctitis and colitis, these complications appearing in more aggravated forms where any pre-existent pathological condition is present; (7) delayed recovery, which may be prolonged for many hours; (8) increased toxemia, dependent on a number of factors.

"To point out some of the theoretical shortcomings of a method does not neces-

sarily condemn that procedure; but by presenting the possibility of undesirable or dangerous symptoms and results, it may help to temper with conservatism the light-hearted manner in which many of these new propositions are taken up, especially by those who are inexperienced."

BACKACHE. — R. W. Lovett, Boston (*Journal A. M. A.*) discusses the subject of chronic backache, including under this head the various aches and lamenesses which are popularly attributed to kidney or uterine disease, and which have been described in medical literature under the heads: neurasthenic spine, hysteric, irritable or railroad spine, chronic lumbago, uterine backache, static backache, relaxation of the sacro-iliac joint, sacro-iliac strain, rheumatism of the spine, chronic back, strain, etc. Spinal tuberculosis, organic nervous disease and the effects of spinal fracture are excluded from this consideration. The most important symptoms are: insistent or intermittent dragging pain in the lower part of the back, sometimes one-sided and sometimes bilateral, generally aggravated by standing or walking and often shooting down into the buttock and backs of the thighs. Lameness in bending may be present and tenderness is usually found over the lumbar region and region of the sacro-iliac joints. The patients usually like to have the small of the back supported by a cushion. Coccygodynia is not unusual. The affection may come on gradually or suddenly; it is more common in women than in men and in certain types of figure such as the kangaroo and gorilla types of Dickens and Foster, the overfeminine type of Reynolds and cases with slight lateral curvature. The resistance of the patients is usually less than the average and the disorder is notoriously chronic. The symptoms may be slight, or severe enough to make the patient a chronic invalid. Lovett gives the fundamental anatomic facts that bear on the condition and enumerates three etiologic classes: (1) those from disease or displacement of the pelvic organs; (2) those due to traumatism; (3) those from arthritis of the spine. There are many mixed cases, however, and there is still an unclassified group for which two theories have been offered and which he proceeds to discuss: (1) the theory of static origin which has been advocated by himself and Reynolds; (2) those due to sacro-iliac strain or relaxation. The former of these he practically accepts; the sacro-iliac theory is rejected by him. As regards the effects of strain, he considers it a more general attitudinal one than one affecting the sacro-iliac joints. The theory of sacro-iliac relaxation advocated by Meisenbach is not considered as supported by the facts. It is satisfactory to some because it needs no etiologic study and only routine treatment. The diagnosis of static backache means that the surgeon must look into the cause of it and try to remove it before treatment. Pelvic backaches have some characteristics distinguishing them from those of static origin, and this favors the view that they are most often caused by the forward bent position, causing increased efforts on the part of the posterior muscles. Mixed cases are frequent. Cases illustrating these forms of pelvic or mixed pelvic and static origin and of those due to traumatism are given. A puzzling class of cases lies between those associated with trauma and those clearly arthritic, but in many cases the latter diagnosis is not supported by the results of treatment. In many cases due to defective balance and flat-foot, inequality of the limbs, etc., are reported. Backache due to relaxed and slumped attitude is perhaps the most common type of static backache. In an analysis of eighty-three cases, twenty-nine males and fifty-four females, there were forty-one of static backache, the majority due to defects of anterior posterior balance; there were six pelvic cases, twenty traumatic and fifteen arthritic. There was one case attributed to acute lumbago. In cases from traumatism we may assume a sprain of the spinal joints or pelvis. If they are non-traumatic, defective balance may be sought for. In all cases of women the possible pelvic cause must be borne in mind. The case must be classed as probably arthritic when it is chronic and there is marked stiffness and pain on motion. Referred pains in the legs and disturbances of sensation are suggestive. Some cases can hardly be classed, however, and a hysteric or neurasthenic spine is no diagnosis at all. The prognosis depends largely on the possibility of removing the cause. In balance

cases proper treatment should succeed unless the patient is neurasthenic. Pelvic cases should go to the gynecologist, and the outlook for traumatic cases is favorable except in elderly persons or those undertaking litigation. In arthritics the treatment consists in fixation of the spine, and he prefers a canvas lacing in the back with light steel straps to plaster-of-Paris casts. Defects of balance should be carefully studied, and Lovett describes a suitable therapeutic corset which can be made by any good corset maker.

THE IMPORTANCE OF URINALYSIS DURING PREGNANCY AND THE SIGNIFICANCE OF THE POSITIVE FINDINGS.—J. Howard Beard, in the *Illinois Medical Journal*, says the analysis of the urine of the pregnant woman at frequent and regular intervals is essential in distinguishing the safe from the hazardous cases and as an indication for the adoption of prophylactic and curative therapeusis, and gives an interesting illustrative case from his experience. He goes on to say that the occurrence of positive findings—though the statistics for proteinuria and carbohydraturia during pregnancy show a great diversity of figures, these differences, in a large measure, are due to the delicacy of the methods employed. The meaning of the presence of albumin, carbohydrate, or casts, is of more practical interest than the disagreement of the statistics of the various authors.

Having detected the presence of albumin in the urine of the pregnant woman, it should be determined whether it has antedated or has occurred during gestation. Is it nephrogenous or extrarenal in origin? Its amount. Is it pathologic or physiologic? Is the nitrogenous output normal and is its derivation unchanged?

The anamnesis, the physical examination, and the first urinalysis will tend to exclude the nephritis antedating conception. The presence of albuminuria and cylindruria accompanied by increased pulse tension, exaggerated second aortic sound, and enlargement of the left ventricle, in the early months point definitely to renal disease beginning before pregnancy.

In the absence of a record of the chronic process, it may be impossible to determine at once whether we are dealing with an acute exacerbation of chronic nephritis or an acute nephritis developing during pregnancy. With this exception, the urinary findings and clinical symptoms of acute renal disease make it readily recognizable.

The presence of albumin accompanied by casts and characteristic renal cells in large numbers demonstrates the lesion in the kidney. We may have albuminuria of prerenal or intrarenal origin adn no cylindruria or marked cyturia. In such instances, if the amount of albumin is small, it would be differentiated from that of the urinary tract with difficulty.

Albuminuria, associated with pyuria, bacteriuria, and mucinuria, in the absence of cylindruria, vascular or cardiac disturbances, retinitis, edema, or epigastric pain indicates a post-renal origin, an involvement of the urinary tract. In some of these cases the albumin disappears spontaneously or clears up under urinary antiseptics; in others the turbid urine persists until after delivery.

The amount of albumin is dependent in a large measure upon its origin, that of the kidney being usually greater than that of the urinary tract. Generally speaking, the gravity of the condition increases with the output of albumin, but this is by no means a fixed rule. The seriousness of the disease is determined by the presence of the clinical symptoms and the nature of the excretory quotient.

For diagnostic purposes the albuminurias of pregnancy may be divided into three groups:

1. The toxic—nephritic or pre-eclamptic, usually accompanied by headache, edema, ocular disturbances, or epigastric pain. In the absence of a definite past history in regard to a nephritis antedating pregnancy, it may be impossible to distinguish between nephritic and pre-eclamptic toxemia. Differentiation is unimportant clinically since the treatment of both types is identical.

2. The infectious or "Albuminuria of Suppuration" of Wallich, characterized by polyuria, turbid or purulent urine, with or without disturbances of micturition, no edema, eye symptoms, cardio-vascular changes or epigastric pain. According to Wallich some of these cases clear up under urinary antiseptics; in the vast majority of

such instances no permanent injury to the urinary system ensues.

3. Mechanical—due to pressure of the gravid uterus and consequent congestion of the kidney or to hyperlordosis described by Jehle and found by Jaeger in 25 per cent. of his cases.

It is evident that in a number of cases of albuminuria during pregnancy, it will be impossible to clearly distinguish between the various types. Where the vagina, bladder, ureter and pelvis of the kidney may be excluded as a source of albumin in the urine, its presence should be considered as proof of some abnormality of the kidney as to the health of its epithelium, or its blood-pressure or both. If the amount of albumin is small and the nitrogen elimination normal or not greatly reduced, the condition may be regarded as pathologic rather than of clinical significance, but the physician should ever be on the watch for the earliest symptoms of beginning nephritis or toxemia.

On the discovery of carbohydraturia in the pregnant woman, it is necessary to consider two forms of sugar, namely, lactose and glucose.

Alimentary glycosuria is of great significance, since it is essential to differentiate it from the glycosuria of diabetes. We may consider this form present when the urine becomes aglycosuric on removal of the sugar from the diet without reducing the other forms of carbohydrate below the normal intake.

Melituria during pregnancy, in the absense of the clinical symptoms, should by no means be interpreted as a sign of diabetes until lactosuria, alimentary, and transient glycosuria have been excluded as far as it is possible to do so, as the chances are much in favor of the disease not being present. It is relatively uncommon in women and when occurring, tends to begin after the climacteric. On the other hand, the diabetic woman is unlikely to become pregnant for the disease frequently decreases or destroys the libido sexualis and so disturbs the structure and function of the internal genitalia as to make conception improbable.

Unfortunately, in a small per cent. of cases conception may be superimposed on diabetes or diabetes may occur during pregnancy.

Therefore, in the absence of characteristic clinical symptoms, a determination of the nature of the sugar in the urine is of the utmost importance.

For practical purposes, lactose may be distinguished from glucose by being non-fermentable. More nearly accurate information may be obtained by isolating the substance in crystalline form.

Lactose and glucose may occur in the same urine and should be suspected when there is a well marked difference between the titration reading, and that of the saccharimeter or between the polarimeter and the saccharimeter.

When glucose is detected the problem is more complicated, since between the mildest glycosuria and the most grave diabetes, all gradations occur. It is necessary to distinguish between alimentary and transient glycosuria and true diabetes.

We may consider alimentary glycosuria to be present when the symptoms are negative, the amount of sugar small, and the urine becomes free from glucose on removal of sugar from the diet. This form of glycosuria has no clinical importance.

Inquiry into the past history of the patient may clarify the diagnosis by revealing glycosuria antedating pregnancy.

In absence of symptoms, it is impossible to determine whether a given case is diabetes or will clear up under treatment. The seriousness of the condition, however, may be relatively determined by the amount of sugar excreted and the period of pregnancy in which it occurs. A large amount of glucose appearing in the urine early in pregnancy even in the absence of symptoms should be suspicious of diabetes and of grave import. In any event, where glycosuria is present and it does not appear to be alimentary, careful and frequent observation of the patient is imperative.

On account of nitrogen retention due largely to fetal growth, the amount of urea excreted by the pregnant woman is less than that of the non-pregnant and in the last month of gestation may reach 70.8 to 76.6 per cent.

Low urea elimination is not regarded with equal significance by all observers. The majority, however, are agreed that marked diminution in the quantity of urea is a seri-

ous sign and indicates the institution of prophylactic treatment.

The amount of ammonia-nitrogen excreted during normal pregnancy is from 4 to 6 per cent. The absolute ammonia output remains approximately the same from day to day, the relative output will vary with the changes in the total nitrogen metabolism.

It has been shown that some supposed instances of high ammonia output have been caused by vesical contamination whereby ammonia arose in the urine as a result of bacterial changes. In such cases irrigation of the bladder with a saturated solution of boric acid produced prompt reduction in the ammonia nitrogen, the food intake and total nitrogen remaining unchanged.

The total nitrogen is dependent on the amount of food ingested, the nitrogen retention, etc. An increased percentage of ammonia nitrogen may, therefore, be due to the amount of food eaten or the protein stored. The importance of the microscopic examination of the urinary sediment of the pregnant woman can hardly be over-estimated.

Modern methods of centrifugation and the examination of the urine shortly after it is passed greatly increase the likelihood of finding cells and casts. The discovery of occasional hyaline or stippled casts should not be considered with grave apprehension. A small number of epithelia may be regarded as a normal constituent of the urine.

The presence of many casts and renal cells or cells from the deeper layers of the mucosa of the urinary tract point to disease of the kidney or urinary passages more clearly than does albuminuria. In catheterized specimens, hematuria or pyuria is proof of hemorrhage or infection of renal or post-renal origin. When either is associated with cylindruria differentiation is not difficult.

The microscopical findings are, as a whole, more dependable and more readily interpreted than the positive chemical tests.

In Conclusion.

1. In pregnancy, so-called physiologic albuminuria should be regarded as indicative of renal abnormality and the patient watched accordingly.

2. Recognition and differentiation of the different types of albuminuria are imperative in order that the members of the toxic group may be discovered early, their gravity appreciated, and proper treatment instituted.

3. The infectious and mechanical types should be carefully observed to detect developing nephritis and to avoid any increased irritation of the renal epithelium.

4. Melituria during pregnancy, in the absence of clinical symptoms, should by no means be interpreted as a sign of diabetes until lactosuria, alimentary and transient glycosuria have been excluded.

5. In the absence of symptoms it may be impossible to determine whether a given case of glycosuria will or will not clear up under treatment. When glycosuria is present and it does not appear to be alimentary, careful and repeated observation of the patient is absolutely necessary.

6. Very low urea output is a danger signal and the patient should be kept under close supervision.

7. High ammonia may be due to increased total nitrogen eliminated, following nitrogen retention, inanition, catharsis, etc., or it may also result from bacterial contamination of the bladder, and may be unaccompanied by any unfavorable symptoms.

8. No great emphasis should be placed on percentage values in determining a radical course of clinical procedure, but we should be guided by the symptoms, as well as, the urinary findings.

9. Analysis of the urine is a means of great value in separating the safe from the hazardous cases, and while it may not tell when to empty the uterus, it should lead to the use of such diet, hygiene, and medication that intervention in many cases would be unnecessary and many children would be born that otherwise would have been doomed.

Abderhalden Test in Mental Disease. —Charles E. Simon, Baltimore (*Journal A. M. A.*) takes up the claims of Fauser as to the findings of the Abderhalden test in certain types of insanity with special reference dementia praecox. He reviews the literature which followed Fauser's publication and says that in surveying it one cannot help being impressed, on the one hand by the wonderful uniformity of the results reported by

Fauser and the wide divergence from those of certain other authors, like Hauptmann and Bumke. He thinks that there is good ground to suspect that Fauser was too enthusiastic in his views and also that his opponents may have lacked complete control of the technic. Fauser himself states that he obtained a reaction with sex gland repeatedly in cases in which it was unexpected and that the diagnosis between maniac depressive insanity and dementia praecox could not always be made with certainty. Simon relates his own experience with the use of the test in 106 cases and says "to summarize the results" that a sex gland reaction may be obtained in nearly if not all cases of dementia praecox at some stage or another but that this action is not specific as Fauser asserts. He finds that the reaction may also be obtained in other forms of insanity and he does not attempt to explain them. He must therefore conclude that Fauser's rule has exceptions or that the positive findings in manic-depressive insanity or paresis are due to errors of diagnosis or technic. The fact, however, remains that in dementia praecox the positive reaction is the rule while in the purely functional psychoses it is the exception. Simon, therefore, discusses at length the technic employed and which he thinks meets fairly any criticism from the technical point of view as far as our knowledge goes at present. He believes, however, that advances can still be made and while we cannot, as yet, draw positive conclusions regarding the significance of the reaction in dementia praecox, certain possibilities suggest themselves. One of these is that of a perverted function of the cells concerned in the production of the internal secretion of the sex glands in dementia. "Considering the problem from the clinical side, the all-important question of course suggests itself whether or not the reaction has any relation to the pathogenesis of dementia praecox. Theoretically, this is of course perfectly possible. Granted that anti-sexgland ferments do occur in the circulation in dementia praecox, and that their presence were the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then we may also assume that digestion of these cells or cell-products will take place, and that all conditions would thus be given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then we might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs, might similarly be expected to have a beneficial influence. Evidently, the problem is now open to investigation from many sides, and it does not seem unreasonable to expect that definite advances will be achieved in the near future."

TYPHOID VACCINATION.—At this time when typhoid fever is the subject of general interest to physicians, it may be interesting to our readers to note what the *Medical Press and Circular* says. The writer believes that as a preventative the vaccine will become, in time, as popular as the Jenner vaccine, and will be freely used for children and adults in periods of epidemics. Last summer a severe outbreak of typhoid fever occurred in the town of Avignon; nearly half the population was vaccinated, with the result that the epidemic was stamped out. Naturally, severe hygienic measures were taken also.

As to the counter-indications, the anti-typhoid vaccine should not be employed in subjects suffering from any acute or chronic affection; coryza, grippe, tonsillitis, bronchitis, pulmonary or febrile gastric affections, enteritis. Among the chronic affections may be classed tuberculosis, malaria, syphilis, cardiac and renal disease, diabetes.

Generally, says Army Inspector Dr. Schweider, it would be well not to choose a moment of mental fatigue (studies for examinations) or where the patient is debilitated or at the menstrual period of women.

The vaccine is delivered in ampoules of 2, 5, 10 and 20 cubic centimeters. Each ampoule contains a label indicating its origin and the date of its manufacture. The vaccine must be kept in a cold place and away from the light; in this way it maintains its effect over three months.

The syringe used may be that of Pravaz or Luer, but of a capacity at least of two and a half cubic centimeters.

The seat of injection is the left shoulder (the right in left-handed persons) behind the posterior edge of the deltoid and two fingers' breadth above the axillary fold. The skin is first painted with iodine, and the liquid injected slowly beneath the skin, under the aponeurosis or into the muscle, and the patient recommended to keep his arm quiet for two hours.

The vaccination requires four injections at intervals of from seven to ten days at the following doses:

First injection, half a cubic centimeter.

Second injection, one cubic centimeter.

Third injection, a cubic centimeter and a half.

Fourth injection, two cubic centimeters.

For children these doses will be reduced by one-half. A drop of tincture of iodine seals the little orifice.

Although the patients need not interrupt their occupation, certain precautions should be taken, as abstention, the day of inoculation, from all fatigue or excess in eating and drinking. They should be made to understand that they should not consider themselves as immunized until they have received the complete series of injections, and not before twenty days have elapsed since the last injection.

The best time of the day for the injection is from four to six in the afternoon, as if any reaction took place it would pass away unnoticed during sleep.

The duration of the immunization is not, at the present time, definitely fixed, but it is supposed to cover two years and a half.

As curative treatment, the vaccination influences favorably the course of the malady when employed in the early stage and provided that the spleen is not too much enlarged. Preference should be given to autovaccine, but this is not easy, to obtain, the choice rests with the hetero-polyvalent vaccine of Wright. Under its influence the fever goes down slowly but progressively, and convalescence is less prolonged.

PROBLEMS IN THE DIAGNOSIS OF CLINICALLY DOUBTFUL TUMORS OF THE BREAST. —M. N. Hadley, discussing this subject in an interesting paper which appears in the *Indianapolis Medical Journal*, says:

The surgeon's most difficult problems, as well as the pathologist's arise in an effort to determine the proper surgical therapy in the clinical doubtful cases. Shall the tumor be enucleated? Shall the breast be excised? Or shall the radical operation be performed? These are the questions that the surgeon must answer at the moment of operation in the class of cases now under discussion—that is, the cases in which a positive diagnosis of malignancy cannot be made prior to the operation.

It has been definitely proved that it is an exceedingly dangerous thing to cut into a breast tumor, remove a part, or all of it for future study, and if found malignant do a radical operation ten days to two weeks later. This, perhaps, might be safely done if the cutting were all done with a cautery, but in case the tumor was found to be benign a bad wound would be left. The surgeon, therefore, must be prepared to complete his diagnosis at the exploration, and immediately proceed with such therapy as the diagnosis demands.

At this point the surgeon has two diagnostic resources, both of which are valuable, and should be available in every hospital professing to do scientific surgery. These resources are the rapid frozen section study of the cellular pathology by a trained pathologist, and a careful study of the gross characteristics of the freshly excised tumor by the surgeon.

Reference has already been made to some of the difficulties of early microscopic diagnosis. Due weight must be given these difficulties, but on the other hand it is of great value in a per cent. of cases, and in my judgment every patient with a doubtful breast tumor is entitled to the benefits of such a method of diagnosis. Even though the frozen section examination may not be universally dependable the increasingly large number of tumor cases demanding methods of diagnosis other than clinical makes it absolutely incumbent on hospitals to equip themselves properly for this work.

The other diagnostic resource of the surgeon is for him to be his own pathologist and from an examination of the gross appearance of the freshly removed specimen, attempt to make a diagnosis.

To the man who is accustomed to think-

ing of tumor tissue in terms of the cell, gross examination seems a very crude and unreliable method. And yet any one can distinguish fat from connective tissue or skin from mucous membrane on gross section Often he calls to his aid the color of the tissue or the way it feels to the touch. So that in making gross examination one has the advantage of observing the color, the presence or absence of cysts, their size and the character of their contents; by the sense of touch one can observe its resistance to the knife and to the finger, and it can rather easily be determined whether the tumor is distinctly encapsulated.

If one would learn to correlate knowledge gleaned from the microscope with gross characteristics and clinical history, a correct interpretation of the gross picture could be made in a considerable per cent. of breast tumors which clinically have no distinguishing characteristics.

INOPERABLE CANCER.—J. F. Percy, Galesburg, Ill. (*Journal A. M. A.*), after noticing the various agents that have been advised and used in cancer of the inoperable varieties, takes up the question of the vulnerability of cancer to heat, a fact which he thinks suggests the possibility of developing a method that will be of value. The methods which he enumerates as being possible or as suggesting themselves are: hot, air, hot water, electric coagulation, fulguration and actual cautery. The first two may be dismissed as having too little penetration. Electric coagulation goes deeper, but the rapidity of its action and the inability to direct it in the cavities, aside from the complicated apparatus and skill required, make it impracticable. The Keating-Hart method of fulguration is also not favorably regarded by Percy, and in comparison with the difficulties of the foregoing method, he says: "I have devised a practical method for the application of heat in the treatment of carcinoma that has none of the objections that the various methods already enumerated have. The penetration of the heat by the method to be outlined can be definitely determined and regulated. Its applicability has almost no limitations; when the malignant process is at all accessible, the required apparatus is not expensive, and it is easily portable. The method to which I refer is the application of heat from an electrocautery, accurately controlled by a rheostat, and applied to the affected tissues." He describes experiments made on fresh beef muscle which show that by this method when a charcoal core is avoided, the area of coagulation far exceeds in size that ensuing from the application of greater heat for a longer period of time. It is better, he says, to develop a heat below the degree of carbonization than to try to burn up the mass with a heating iron at high temperature. The charcoal core that is left after cauterization, moreover, not only prevents the scattering of the heat, but also interferes with subsequent drainage and endangers the patient from the absorption of killed cancer cells. If the primary gross mass of cancer, which is usually accessible, can be rendered innocuous by raising the temperature with an electric heating iron and the remaining small amount of lymphatic involvement be reached by thermic-raising, artificially produced toxins, serums or vaccines, as is emphasized by Vidal, then our dreams of doing something for cancer may be in the way of being realized. Percy believes that he has developed an efficient and harmless method of applying heat which may be useful in the eradication of certain forms of cancer.

PREGNANCY AND CERVICAL CANCER.—After remarking on the rarity of such a condition and its almost universal fatality, R. Y. Sullivan, Washington, D. C. (*Journal A. M. A.*), reports a case of advanced cervical cancer in a pregnant woman diagnosed as such about the sixth month of gestation. The child was living and vigorous and its interests were considered paramount. Labor ensued at approximately the thirty-second week of pregnancy, Cesarean section and amputation of the uterus was performed above the cancerous mass and the cervical stump treated extraperitoneally. The child was still-born and the mother died six weeks after the operation. She was out of bed but her failure in general was very rapid. The natural treatment in such cases would seem to be abdominal Cesarean section as giving the best chances for the child and mother, while natural labor with a friable diseased cervix can offer little hope for either.

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PROGRESS?

The rapid change of views regarding the etiology of disease must surely affect the great system of therapeutics.

When we take a retrospective view of the supposed causes of our ills may we not ask, are we nearer a satisfactory solution of this great problem than we were in earlier days? How many towers, now in ruins, were erected in celebration of theories once so universally accepted, which are now erected on micro-organisms, the unseen messengers of disease and death. Years have passed since Koch proclaimed to the medical world the discovery of the tubercle bacillus. We have classified fourteen varieties of "cleft fungi," and like a great family, are subdivided into many species. The theory now, is that nearly every disease is due to the presence of micro-organisms; that germs are not the *result* of disease, but are the cause! May it not be that we are always infected with them, and that in diseased conditions they develop, *i. e.*, they become active? They are the menace in pneumonia, so they say.

We are taking in bacteria constantly, but our vital resistance renders them harmless; when we are ill, they play *hobb;* maybe! This may not be scientific, but I believe it just the same. If we accept the theory that all diseases are caused by germs, our therapeutics ought to be confined to bug killing!

Prof. Yeo, of Kings College, London, devotes to the physiologic effects of 250 of different vegetable; 140 mineral; 25 animal drugs, and 500 of these compounded. What an endless variety, and enormous quantity, of drugs we have, and, if we are to be destroyed by bugs, we might just as well dispense with most of them as useless.

D. L. F.

MEDICAL PROBLEMS OF WAR.

According to an editorial in the *Journal-Lancet*, war with Mexico seems at present writing inevitable. Are we to have a repetition of the unpreparedness that characterized the war with Spain, or have we profited by the methods employed by Japan when in conflict with Russia and by those in the recent Balkan war?

Thus far, nothing has been said about the medical corps in the coming struggle, and the assumption is that the armies that have guarded the border-line of the United States and Mexico are sufficiently officered and prepared.

The greatest error in the war with Spain was the failure to establish proper sanitary camps, water supply, and an independent and centralized medical department.

There is at least one thing that we have learned, and that is, that every soldier should be immunized against typhoid before he enters into camp service. The probabilities are equally good that every man who enlists will be vaccinated before he is uniformed and before he handles a gun. If typhoid can be eliminated, the soldier is comparatively safe. Typhoid and other avoidable diseases have caused more deaths than gun-shot wounds.

It was shown that thirty per cent. of bullet wounds among the Servian troops became infected, and shrapnel wounds almost invariably. It was also shown that at the firing-line aseptic dressings saved many lives or greatly decreased the effects of wounds. Compulsory bathing, frequent change of underwear, and disinfection of clothing added greatly to the comfort of the troops.

Bourquin recommends the use of tincture of iodine and a fixation of dressings by mastisol, which is a species of collodion. Hydrogen dioxide, in spite of its possible irritative qualities, is urged, together with the alternate use of balsam of Peru in the treatment of wounds. The surgeon may advocate other measures, but old-time remedies have their uses. An effort should be made to save limbs from amputation unless septicemia appears, when the rule holds good to amputate at once unless the vigor of the injured man warrants delay. One of the greatest dangers to the soldier is exhaustion from forced marches or protracted service. Usually slight fever accompanies exhaustion. Weak kidneys, a weak heart, and pain in the extremities are overcome by three or four days' rest and the administration of digitalis and strychnia. The Balkans found that relapsing fever was cured by two doses of 0.4 gram of salvarsan. The Greek troops were immunized from cholera by serum injections but the Servians suffered heavily from this cause.

These and similar problems will come up in a war with Mexico, as it is a tropical country where malaria abounds. It is to be sincerely hoped that the United States Government will look more carefully after its troops from the medical side than ever before; and if General Wood is to be in command his medical training will guarantee full authority to the medical department.

The sanitary problems that were so skilfully met by Dr. Gorgas at Panama will provide the strongest arguments possible for care in this line.

There are too few trained sanitariums in the country at present, but those who have proved their worth will be amply aided by numerous medical young men who will cheerfully enlist in the service. The medical graduate of today is better trained in the fundamentals than the graduates of ten years ago; and they will be plastic in the hands of their trained superiors.

If we must have war, let us have a clean medical equipment free from politics and supplied with every modern method for saving limbs and lives.

REFLECTIONS.

The occupation of a general practitioner, whose duties are continuous, and necessarily routine, is not conducive to that original research in any of the fields of science, familiarity with which is so necessary to his education. With our modern facilities for printing and distributing knowledge, everything is known as soon as thought; and much material is contributed which is rapidly increasing our equipment for successfully waging war on disease. Great advances are being made in the development of now theories. Our knowledge of medicine is more voluminous and accurate; and our application of remedies more effective. Because of our knowledge of some diseases, and the effects of newer agencies, we are accomplishing more cures, and thereby lengthening the span of life. With all this, however, we are hampered a great deal by the ignorance and superstition of the people. Such impediments circumscribe our powers, and retard our progress.

It has been characteristic of human ignorance to attribute disease to some inexplicable power of hypothetical beings, good or evil, or to attribute it to the sensuous, impalpable, and invisible entities. For centuries nearly all disease as well as other natural phenomena of a disagreeable character were thought to be the machinations of the devil, through imps and witches. The practice of the healing art was not much more than a species of jugglery, or *black art*, by which one kind of magic was counteracted by another.

Some absurdities were still in existence fifty years ago. The writer of this has been in the practice of medicine forty-six years; and he has been a student of medicine nearly all his life, as his father was a practitioner from 1825 to 1888, and he always had his heart set on *trying* to make a doctor of him!

Looking backward, and knowing the light they had in early times, I am certain they

accomplished wonderful results with the means they then had. I am not so sure that we of today, are reducing the mortality rate much more than those early workers did. Certainly we have advantages they never had, but the types of diseases have changed also. The old-time idiopathic grave typhoid of other years, is not found today, but those old-timers "fit" it to a finish (?) (Generally the *patient!*) D. L. F.

VOICE AND MANNERS IN MEDICAL PRACTICE.

Dr. Crothers in his interesting article in the *Medical Record*, on voice and manners in medical practice says, the president of a great university when asked why it was that some of his teachers showed such irregularities of thought and manner replied, "culturred men are abundant, but gentlemen with cultured manners, trained voices and common sense are very rare."

To a certain extent this is true of physicians. Common sense and gentility are acquired after a while, but voice culture is wanting. Both the legal and clerical professions show the same weakness. Attempts to cultivate the voice are considered superfluous and of no value, and manners are a question of the individuality of the person, and of minor importance.

How often one notes the popular doctors of the city or village or town, the doctors who are praised by their patrons everywhere, and command the respect of all classes, who are scientifically very mediocre men? One man of this class had a very musical, trained voice. His mother had been an actress in early life, and she insisted that her son should have exact ways of expression and pronunciation, and with them natural and attractive manners, and this culture had continued all through life and was one of the largest assets in his professional work. He was a man of good sense and quick to profit by the experience of others, and he knew how to express himself in the most excellent and pleasing way. This very power of expression brought conviction and confidence.

The human voice is capable of as high a development as the intellect. The human voice out of tune, broken and jarring, is unfit to set the facts and the conclusions of science in any proper way. There is no organ in the human body so full of possibilities, through training and culture as the human voice, and yet it is practically neglected, and often made more discordant by a great varieties of weaknesses, of which smoking is one. Hundreds of persons graduate every year, from the best schools and colleges with a high degree of intellectual learning, and with voices untrained, whose manners and expressions have been entirely ignored. They talk in broken, discordant notes, in bronchial tones and nasal inflections that are jarring and unpleasant, combined with awkward facial expressions, stilted manners, untrained control of the body, and often a very low sense of the art of dress and personal appearance. They literally follow the medieval theories that the voice, like the stomach and other organs, needs no care or training, but will take care of itself. How often graduates from literary colleges exhibits this weakness and want of culture! How often in medical societies quite learned men read papers, showing the worst possible neglect of the voice, or the common-sense manners and powers of expression! It is rare to hear any one who has any conception of the power of voice and expression. In everyday life the quack, with his polished manners and trained voice, makes a profound impression, while the highly trained doctor without this is unnoticed. There is nothing more important in medical colleges, and the training of medical students, than voice culture. In many respects it is one of the most valuable modes of training possible for future success.

A musical voice, free from discords and harsh notes, with proper inflections and harmonious tones, gives power and strength to the expression of the simplest thought. If to this is added manners, expressions, and poses that are natural and free, there is a certain superiority that is recognized by all. This is seen so often in the sickroom, where a doctor with a musical voice is so warmly welcomed. How often his soft tones and clear methods of expression brings renewed courage and strength to the patient. Like the harmonious tones of music, they strike responsive cords in the brain and nervous system. How often children recognize the tones of the physician and are attracted to

him! In other cases they are repelled. How often the discordant, nasal voices, the lack of expression and grotesque facial twitchings and the general absence of sympathetic culture are positive obstacles in the treatment of disease! Physicians wonder at their failures, and while they are not employed by families who are satisfied by weaker medical counsel, they never realize that their voice and manners are their greatest obstacles. Occasionally a physician recognizes this fact.

How often physicians exhibit catarrhal affections in the nasal tones and feeble voice! How often physicians are unable to express themselves in an impressive way because they are out of tune! They have done those things which will destroy the very powers which are necessary to command attention and help others. Physicians should exercise extraordinary care to keep the voice clear and resonant and prevent congestion which centers in the nasal passages and vocal cords. They should cultivate the most natural polished manners, so that the persons who appeal to them for help can be impressed by something more than the drugs they give or the operations they perform. Physicians should represent the highest type of culture; culture that is real, apparent and genuine, not superficial and transient. They should exhibit voice culture and body training in its fullest sense. These are the most essential things in the sickroom, and in company with invalids and weaklings who are ever looking for strength.

Lawyers, clergymen and doctors all fail to secure the influence with the people with whom they come in contact because of inability to express their thoughts in an impressive way. Had the voice been trained the same as the eye and the intellect, had the exterior qualities been trained to express like the voice the best and the clearest facts they would all have been successes.

Asylum and hospital physicians furnish innumerable instances of the power of the voice to alter the course of disease and to change the atmosphere of the patient's mind in the most helpful way. We all recognize the power of the mind over the body in many wonderful and unknown ways, but it will be new to most readers that the voice, if properly cultivated and trained, would be equally powerful and effective in producing what is practically unknown now. Books have been written showing that music has a peculiar power in diminishing the irritation and nervous disorders of individuals, and that many times it is a veritable remedy, but so far no one has pointed out the power of the human voice to do far more than any mechanical instrument and vibratory sounds.

Every medical student should be taught voice culture and general manners; how to conserve the voice and develop it so that it will express thought in its most powerful form. Professional training in the future will give far more attention to the voice and its practical character will be recognized in every circle.

THE NEW TREND IN THERAPEUTICS.

A rather interesting editorial appearing in the *Therapeutic Gazette* recently says:—

We have long been of the opinion that the day is not far distant when it will be discovered that many drugs which possess great power for good depend for their beneficial effects not so much upon their ability to stimulate or depress the circulation or the nervous system as upon their influence upon less obvious but nevertheless important functions of the body, as, for example, the changes in the production and circulation of lymph, in the activity of the phagocytes, in the production of opsonins, and possibly in the development of antitoxic bodies. Every clinician of large experience is fully aware of the fact that salicylic acid aids in the elimination of uric acid and that it seems to be destructive of the streptococcus rheumaticus, yet this knowledge in no way explains the excellent results that are obtained by its use in certain conditions of the eye, of the throat, and of the muscles. So, too, there can be no doubt that our use of quinine in the early stages of acute infections cannot be dependent upon any influence which it exercises upon the circulation, but rather upon its ability to enable the body to combat invading organisms when they first attack the patient. We have as other illustrations the, as yet, empirically used but nevertheless clinically active iodides and mercury, the effects of which upon the body may be considered an unexplored realm of therapeutics, no satisfactory

explanation of their action having been brought forward.

Various researches are, however, beginning to throw a ray of light along a path which heretofore has been in darkness, and these researches have largely been along those lines which more or less directly ended in the development of salvarsan and neosalvarsan. Only a few years ago it was commonly believed that it was impossible to administer a drug which would destroy invading bacteria, or other parasites, without also destroying the more delicate protoplasm of the host. This belief is to-day on a stronger basis than ever before, and chemotherapy, as it has been called, is showing us on the one hand the correctness of this view, and on the other that it is possible to introduce into the body substances which do not act directly upon invading organisms but which stimulate the protective processes of the host or, by an indirect effect, render the invading germs more vulnerable to the mechanism of protection. Thus, the observations of Wolferston, Thomas and Uhlenhuth proved that atoxyl when it destroys trypanozomes or spirochætæ does not do so by any direct action, since it failed to destroy them if it was placed with them in a test-tube, whereas in the body it is an active factor. Ehrlich himself apparently was of the opinion that salvarsan acted directly upon the spirochæta of syphilis, but he now accepts the view that this is not the case and that the salvarsan develops antibodies, thereby aiding the body in protecting itself from disease.

It is interesting in this connection to note that a number of investigators seem at times to have been on the threshold of an important discovery without crossing the threshold. Thus, Blumenthal noted the difference of atoxyl in and out of the body, and thought that there might be in it some slumbering or unknown antitoxic or antiseptic substance, or that the aniline dyes which were so efficient in destroying the trypanosome might contain some such unknown factor. His views were doomed to disappointment, but it is worth noting that although this was his point of view in 1908, in 1912 he claimed that all substances previously tested and thrown aside as useless must again be fully investigated—not from the standpoint of direct bacterial effects, but to determine whether they do not in the body, or in the presence of blood serum, develop a second factor which is directly concerned in the destruction of the pathogenic germ. Furthermore, Morganroth and Jacoby in 1912, showed that quinine, and its derivatives, had bacterial action on pneumococci in the body, although they had no such influence upon this organism when placed in a test-tube. Franz Blumenthal has shown that corrosive sublimate is highly toxic for spirochætæ *in vitro*, but of little value in syphilis in rabbits; that the aromatic compounds of mercury, while entirely devoid of bactericidal properties *in vitro*, nevertheless have powerful therapeutic activities *in vivo*.

These results not only emphasize the importance of differentiating between these two methods of testing, but also indicate that when a drug fails to act as a bactericidal substance in one animal it does not necessarily prove that it will fail to act in another animal or in man, a reasoning which is supported by Neisser and others, who have shown that certain mercurial compounds which are active in the destruction of the spirochæta in man have much less effect in animals than do some preparations of arsenic. This is of interest by reason of the fact already known, and well recognized, that the vaunted salvarsan, an arsenical compound which is so active in destroying parasites in animals, must be supported by mercury if it is to be thoroughly successful in destroying spirochætæ in mankind.

This important subject is summed up in a most interesting manner in a brief article which is contributed to the *Edinburgh Medical Journal* for December, 1913, by Dr. John Eason, and to which our readers are referred for his original remarks. Thus he points out, going still further along the line we have indicated, that the toxicity of the salicyl preparations towards the streptococcus in animals is very slight, whereas it would seem that there are good reasons for believing that they are very efficient in man. All of this means that when a remedy has been found therapeutically active and is tested in the laboratory upon an animal in an experiment and proved useless, it does

not necessarily follow that the original observation at the bedside is inaccurate. On the other hand, there can be no doubt that animal experiments are essential in pioneer work in order that human beings may be protected from the effects of powerful agents which are proved by experiments upon animals to be toxic to all higher forms of protoplasm.

As illustrating the extent to which protective processes in living bodies may be stimulated by the introduction of chemical substances, it is interesting to note that Böhnke has shown that in animals previously treated with diphtheria toxin the formation of antibodies increases greatly when salvarsan is administered, and he also found in animals infected with the meningococcus that the amount of bactericidal bodies increased seventeen times more in animals previously treated with salvarsan than in animals that did not receive this drug.

Another very important line of thought is advanced by Blumenthal in connection with the influence of the liver and the effects of mercury in infections. We have long known that the liver is an important factor in the destruction of poisons arising in the body, but Blumenthal thinks that when mercury is given this drug mobilizes in the liver protective substances which directly or indirectly affect invading parasites, and in support of his view he points out that all mercurial combinations so far found active in the treatment of syphilis are fixed in the liver, while those which are not so fixed are of no value in its treatment.

So far it will be noted that the substances discussed seemed to act by producing antibodies or opsonins, but Eason quotes Rosenstein, Wolff-Eisner and others who have proved that silver produces a hyperleucocytosis, thereby providing more leucocytes for phagocytosis or more leucocytes for the production of protective bodies.

It would seem that at the present time many of our therapeutic views are of necessity almost as crude as were those concerning the circulation of the blood before Harvey's epoch-making discoveries, and it is quite possible that within the lifetime of many readers further investigations will place not only new remedies in our hands but show us how old remedies, well-tried and reliable, but still employed empirically, really produce their good results.

EARLY OPERATION IN CASES OF UTERINE FIBROIDS.

The passive or expectant attitude was formerly quite generally observed with regard to the treatment of uterine fibroids, though of late not a few voices have been raised in favor of early operation. In the *Medical Press and Circular*. Arthur E. Giles makes a fresh plea for early operation in such cases. He states that the possible reasons for the expectant method are: (1) That at the menopause the symptoms disappear and the fibroids tend to shrink. (2) That fibroids are not dangerous tumors. (3) That operation is attended by a high mortality insomuch that the risk of operation is greater than the risk of leaving things alone; and that years of invalidism and disability are preferable to running the great risk.

Giles thinks that the first of these reasons is based on a succession of fallacies. One of these is the assumption that the only bad symptom of fibroids is hemorrhage. Hemorrhage is only one symptom, and moreover it is a symptom in only some kinds of fibroids. The other symptoms, pain, pressure effects, disability, and general weakness, are not improved by the menopause and may be aggravated. The assumption that hemorrhage caused by fibroids is only menstruation, is one that could be excused only if made by a layman. The argument that fibroids shrink after the menopause will not bear looking into. Giles points out that in many cases they actually increase in size and in the few cases where a shrinkage occurs the effect may be worse than it was before, as a fibroid that lodged previously above the pelvic brim may become impacted in the true pelvis.

As for fibroids not being dangerous tumors the same may be said of ovarian tumors, the dangers of which lie in their possible complications. In the same way, the danger of fibroids, apart from the draining effects of hemorrhage, lies chiefly in their possible complications. Moreover if it could be truly said that ovarian tumors are dangerous but fibroid tumors are not, there still remains the question: Can we be sure, in

eight years of age and unmarried. She is a college graduate, also a Doctor of Philosophy and was special investigator for equal suffrage in Colorado; and also made a report for the Labor Bureau on women and children in industry.

There is little or nothing to indicate that the chief of the Bureau has had any training for, or done any work in the study of children themselves. Her work seems to have been almost wholly sociological and mainly with young people and adults rather than children.

But whatever the qualifications of the chief, it is generally assumed that the assistant chief should know all about the subject. But it does not appear that he has had the least preliminary training and experience in child study. It is true he and the other officers might read up on child study, but it was hardly intended that the Bureau should become a training school at public expense. Or the chiefs might employ someone who did know about children, but there are already enough examples of people who do the real work of the government with very small salaries while those over them who know less about the work draw the large salaries.

With the statistical expert as with the chief, her training and work have been not only sociological, but also related almost wholly to adults and not children.

Personnel not to be Criticized.

It seems that when the Bureau was formed (mostly by transfer from other Bureaus), the question as to whether anyone *knew* anything about children was never asked, and the personnel can hardly be blamed for taking their position. Perhaps no one is to be criticized for the condition of this Bureau.

The idea seemed to be, that anyone could take statistics about children and *interpret* them. The study of children themselves, their psychology and their physical nature, that is child study, which is the foundation work of any children's bureau, seems to have been ignored.

Knowledge of Child Itself Necessary.

Child study is the scientific side of the work and getting statistics about children is more of a sociological nature. *But scientific knowledge of the child itself is fundamental and is necessary for competent sociological work on children. Thus to know what facts are important about children in any relation, and after these facts are collected to arrange, classify and interpret them cannot be done properly and adequately by anyone, who has not had training and experience in the scientific study of children.*

It will be noted in second provisio of the amendment, that medical training is required and not necessarily the degree of M. D., so that those trained in any of the different schools will be eligible.

DRAINAGE OF THE GALL-BLADDER IN TYPHOID CARRIERS.— Dr. Effie L. Bobdell, in the *Illinois Medical Journal*, reports an interesting case of a woman typhoid carrier and calls attention to the fact that the female carrier is less apt to be carefully watched than the male wanderer. In conclusion she says:

1. Typhoid fever diagnoses are not always made at the initial illness.
2. In view of the fact that typhoid is so general in its distribution and now known to be so chronic in its course, would it not be well to add to our routine examination of all cases showing autotoxemia as a symptom, or other obscure symptoms, the Widal test, the urine culture and examination of feces?
3. That we seek to determine whether chronic typhoid cariers yield to modern medicine or are surgical cases.
4. That we ascertain whether a simple drainage of the gall-bladder be sufficient, or removal of gall-bladder and cystic duct be necessary.
5. That typhoid carriers should be prevented from wandering, *i. e.*, be placed under public health control, but *treated* as well as quarantined.

In cellulitis of the fingers, avoid if possible incisions over the tendons which, by exposing them, encourages their destruction.— *American Journal of Surgery.*

When amputating an infected finger or toe it is very desirable to snugly ligate each tendon, sheath and contained tendon to prevent the entrance of infection into them.— *American Journal of Surgery.*

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PROGNOSIS IN CARCINOMA OF THE UTERUS

By WILLIAM SISSON GARDNER, M. D., Professor of Gynecology, College of Physicians and Surgeons, Gynecologist to Mercy Hospital, Baltimore, Maryland.

The prognosis in carcinoma of the uterus depends upon the variety of the carcinoma, the progress that has been made when it is discovered and the treatment instituted.

We have, as a rule, depended for our prognosis almost entirely upon the degree of advancement and the treatment and have said little about the variety of the carcinoma. Many of our statistics giving reports of cures of carcinoma of the uterus by some particular operation have almost invariably failed to state the variety of cancer operated upon, or the classification has been confined to a simple division into carcinoma of the cervix and carcinoma of the body of the uterus. While this simple division is of some assistance, it is very far short of what should be stated. This becomes clear when we remember that there are at least four distinct types of carcinoma of the cervix, and certain modifications in the type of the adeno-carcinoma of the body of the uterus.

Covering the vaginal portion of the cervix and extending as far as the external os we have the same variety of squamous epithelium that covers the vaginal mucous membrane. From this squamous epithelium we have three distinct varieties of carcinoma developing; the first variety made up of cells from all the layers of the squamous epithelium, which for lack of a better name we will call squamous carcinoma; second the basal cell epithelium, which is developed from the lowest layer of the normal epithelium; and third the scirrhus carcinoma which is characterized by its slow growth and the increase of the connective tissue between the masses of penetrating epithelium.

Of these three varieties, the squamous carcinoma is the most malignant. It is the type commonly found in the younger women and extends very rapidly. In this variety the invading epithelium dips into the normal tissues in large masses. The epithelial cells are very irregular in size, shape and staining qualities. In the tissues of the cervix just beyond the epithelial invasion is a zone crowded with small round cells. This variety of carcinoma extends more rapidly than any of the others, getting out into the broad ligaments at a very early period of its growth. It has very little tendency to extend upward into the uterus. Even in the last stages it is very rarely seen to have penetrated the uterus farther than the internal os. This early extension into the broad ligaments and its rapid development, makes the prognosis in this variety very grave.

In the basal cell variety the masses of penetrating epithelium are very much smaller in the earlier period of growth and they are distinctly isolated from each other. It can be recognized by the uniformity of epithelial cells both in size and distribution of chromatin, and by the usual absence of pearls and prickle cells. It has a tendency to grow upward into the uterus, and less tendency than the squamous cells variety to penetrate into the broad ligaments. It does not break down and begin to bleed quite so early as the squamous carcinoma. For this reason it sometimes makes great progress before there are any symptoms to call attention to its presence. When discovered early it is much more easy to remove it completely than the squamous cell variety.

In the scirrhus form there is a very slow invasion by the epithelial cells. The cells are very deficient in chromatin and there is a great increase in the connective tissue which apparently affords resistance to the invading epithelial cells. The result is that this form of malignant growth makes very

any given case, that the tumor is a fibroid? Finally the argument based on the high mortality of operation would have had great weight 25 or even 20 years ago; this mortality has dwindled with the progress of abdominal surgery, and hysterectomy may now claim a recognized place, not only as an operation for saving life, but as a means for relieving suffering.

The author's reasons for early operation are as follows: (1) The age incidence of fibroids is so varied that no importance can be attached to age as an indication for operation. (2) Early operation would often allow of a conservative myomectomy, whereas delayed operation necessitates hysterectomy. (3) In a large proportion of cases fibroid tumors are associated with pathological complications, many of which are of a dangerous nature. (4) Diagnosis is still so uncertain that grave conditions urgently requiring operation may be mistaken for simple fibroids. (5) The mortality attendant on the procedures of myomectomy and hysterectomy in the practice of experienced surgeons has become so reduced that operation may legitimately be advised for the relief of suffering, even when life is not directly threatened.

ETHER DRESSINGS.

Although the local use of ether is not new, its value as a local antiseptic has not received the attention to which it is entitled, its only recognized properties hitherto having been its rapid evaporation, which renders it a valuable revulsive, and its ability to dissolve fats. As an antiseptic, however, ether is endowed with a property which no other agent seems to possess to an equal degree, viz., that of penetrating into fissures, erosions, cavities, interstices, recesses, etc., and exerting, through its fumes, its bactericidal influence upon pathogenic organisms which the most careful cleansing with the usual antiseptic solution does not reach. In extensive wounds in which mashed or torn edges and great laceration predominate, for example, the preliminary cleansing is never sufficient to rid the exposed tissues of all contaminating material; in compound comminuted fractures this also tends to delay repair and promote the development of complications. The same is true of infected and suppurating wounds and phlegmons in general, burns, felons, suppurative lymphangitides and erysipelas. The extent of the lesions or the areas exposed militates in no way against its local use, owing to its non-toxicity; indeed the only sign of a general action is the somnolence occasionally observed under such circumstances.

To obtain satisfactory results, however, certain precautions are necessary, upon which Durand, of Paris (*Clinique,* March 13, 1914), recently laid stress after studying the method in a large number of cases. As ether evaporates rapidly, the dressing, after the very careful cleansing of the lesion and the neighboring skin, must be prepared hastily and be so applied as to extend considerably beyond the edges of the injured or diseased area. It should also be made to adapt itself as intimately as possible to the tissues, after being freely saturated with ether and covered with non-absorbent cotton —since absorbent cotton greatly aids evaporation. The whole should then be protected with an impermeable covering of some sort. The edge of this covering being applied with some degree of tightness either by a special bandage, adhesive plaster, or any other means which the shape of the affected region will allow, the evaporations of the ether will be prevented, and its antiseptic action centered upon the exposed tissues. Such a dressing may conveniently be left *in situ* five or six days, when the wound will be found clean and undergoing resolution.

This treatment has been found efficient in all cases. In lymphangitis and erysipelas the temperature soon falls, while the tissues resume their normal color. In phlegmons the suppuration is arrested early and the pain soon ceases. Although the application of ether to a raw surface causes pain, this lasts but a few moments and is followed by local anesthesia.—*New York Medical Journal.*

HYGIENE AND THE RED CROSS AT THE SWISS NATIONAL EXHIBITION, BERNE.

Medical men will be interested in the Hygiene and Red Cross sections of the Swiss National Exhibition in Berne, which opened on May 15th, and which will last until October 15th next.

In the Neufeld portion of the exhibition

grounds, we find the Davoserhaus—a pavilion built by the Davos Tourist Association to illustrate the development of Davos as a health resort. Adjoining is the pavilion of Balneology, built by various tourist associations to attract attention to the thermal springs of various Swiss Spas, and opposite we find the special hygiene exhibition. The exhibition has been partly arranged by the Swiss hospitals, and shows, among other things, an old fashioned monastic medicine chest and a modern hospital dispensary. The Swiss health office shows its methods of testing food with a view to preventing adulteration and also its methods of inspecting slaughterhouses. Hospital wards are also exhibited, both as they were in former times and as they should be now, and a good deal of space is devoted to the work of the Red Cross and Ambulance Associations.

The foundation in the City of Geneva of the Red Cross dates back to the year 1863, and in August next it will thus be 50 years since this most noble of all institutions has been at work. A tree of genealogy will be the exhibit of the Red Cross at the National Exhibition and it will show the wonderful growth of the tiny seed which was sown 51 years ago and which has brought so much comfort and sunshine to the sick and wounded.

The period of the exhibition has also been chosen by a number of congresses and conferences, both national and international, as an opportune moment for a meeting. So has the Swiss Society of Neurology for instance called an International Congress of Neurology, Psychiatry and Psychology to be held at Berne from September 7-12th next. An organization committee and various international committee have been appointed.

PSYCHOLOGY AND MEDICINE BASIS OF CHILDREN'S BUREAU.

Amendment to the "Legislative Bill" (H. R. 15,279), as reported to the Senate, May 15, 1914.

On page 147, under "Children's Bureau," in line 3 after the figures, "$25,640," insert the following words:

Provided that the chief and assistant chief shall be experts in child study, and provided further, that the supervisory officers and all other persons now or hereafter employed, in the bureau, in investigations of infant mortality, diseases of children and similar subjects of a medical nature, shall have had a medical training.

If the personnel of the Children's Bureau be properly qualified, the above amendment will not affect them.

Such an amendment will tend to aid the work of the Bureau in many ways of which might be mentioned:

1st. It will help towards general efficiency in the work.

2nd. It will make it easier to keep incompetent persons from entering the service of the Bureau.

3rd. Most important of all, it will cause the Bureau to take up some of its *basal* work first; that is the study of children themselves, as well as their environment.

4. It will avoid duplicating the work of other Bureaus by doing the basal work, and thus overcome a most serious objection, that has been continually made against the Bureau.

5th. By the law of radiation, the idea of such an amendment may suggest similar amendments for other Bureaus when needed, and thus help departmental service in general.

As this is a new and most important Bureau and as the study of children is comparatively recent, it is all the more necessary to guard against incompetent personnel.

Personnel of Bureau.

The personnel of the Children's Bureau consists of one chief, one assistant chief, one statistical expert and eleven subordinate employes.

The chief is a woman fifty-six years of age and unmarried. She is a college graduate and has been interested in various reform movements, has made special study of the care of the insane, has spent much time in the Hull House at Chicago. She is doubtless a very estimable woman and much interested in humanitarian work.

The assistant chief is a college graduate and under the supervision of a statistical expert, was joint author with him of statistics of paupers in almshouses and of the insane and feeble minded in institutions (published by the Census Office).

The statistical expert is a woman, thirty-

TUBERCULIN TREATMENT OF TUBERCULOSIS

By SHERMAN L. AXFORD, M. D., Leavenworth, Kansas.

In giving this account of the use of tuberculin in the treatment of tuberculosis, I am well aware of the strength of the opponents of this remedy and the confusion of theories as to its action. I am basing my conclusions upon the knowledge I have gained in a clinical way from upwards of forty-five hundred applications of tuberculin in treatment and diagnosis.

It is essential to always remember that tuberculin is not a specific. Of itself it is not a curative agent, an antitoxin, nor an antidote. It is in truth a toxin when introduced into the body already possessed of tuberculinolysin (Sheli). Its action depends upon gradual immunization of the patient by the gradual and judicious introduction into the body of this toxin. By gradually increasing the amount of the toxin, comparative immunity is established, much as a morphine user by gradually increasing the dose of the drug soon finds himself able to assimilate enough morphine to destroy many normal individuals. In reaching this immunity lies the danger.

It makes no difference what condition your patient is in, that is what stage of the disease, so long as he still reacts to the diagnostic tuberculin test. In theory tuberculin is acted upon by the lysen already in the body of the patient and this lysenic action has changed the tuberculin from a non-toxic to a toxic agent and the presence of this lysenized tuberculin causes the organism to produce antibodies. These antibodies destroy or inhibit the growth of the tubercular bacilli. The action of this lysen accounts for the fact that non-tubercular persons do not react to the introduction of comparatively large doses of tuberculin except in those individuals who normally possess tuberculinolysin. (Wolff-Eisner.)

The action of tuberculin is said to be a threefold action. It produces a comparative tox-immunity, antibodies, and is an irritant to the diseased foci, thus producing helpful circulatory changes.

As I stated before it is not my purpose to go deeply into the theory of the action of tuberculin, but rather give a summary of helpful observation based upon quite extensive use of this agent in a clinical way. I believe that the busy general practitioner could obtain very gratifying results by the use of tuberculin if he would give the subject just a little thought and get some of the essentials well established.

For the doctor who treats his patient clinically it is unnecessary for him to know much of the theoretical and scientific side of tuberculin treatment. He can give his patient just as good service if he knows only the clinical side. He should get familiar with some manufacturer's product. Most easily handled is the series of dilutions put out by an eastern house. This series runs numerically from one to six. Each number contains ten doses of two minims each. The initial dose of number one is two minims, the second does four minims, the third dose six minims, up to the tenth dose which is twenty minims. For a week before starting the patient upon a series of injections, it is essential to keep a chart of his temperature as a guide or control, so that you can have some idea of what your patient's temperature is normally before you begin treatment. The initial dose should be in any case only half that recommended by the manufacturer—that is, instead of an initial dose of two minims, I begin with one minim. The temperature should be taken every six hours for the first twenty-four hours after the injection. The patient can do this himself. When the patient comes back for his second injection (one treatment a week is more convenient, safer and just as effective) question him as to the effect of the injection; look for weakness, loss of appetite, loss of weight, headache and other toxic symptoms. If there is anything like a perceptible reaction, the patient will generally tell you, for he will not have felt just as well. You must use tact, or in an individual susceptible to suggestion, his mind might conjure up some of these symptoms. Then look at his temperature chart. There should be no rise in temperature. Next examine the sites of injection. The injection should be made in the back where the patient cannot examine the wound. It should be well under the skin—not in the skin. At the end of a

week there should be no evidence of the injection. Redness, odema and tenderness are indications of too large a dose and must be taken into account as much as loss of appetite, weakness, headache, etc. If the patient has observed no symptoms, if the temperature corresponds with that of the week before the injection and the sight of the injection is normal, you are safe in increasing the second injection to one and one-half minims. The third injection can be raised to two minims and this continued until the 10th dose of the first series is given, providing of course that no symptoms of reaction has occurred. In starting upon a higher series it is always best to commence as described for series number one, as you are dealing with a more concentrated solution and there is more danger of a reaction. Therefore in beginning number two, it is always best to give one or even one-half minim doses until you have felt your way so to speak back to the standard dose of two minims.

As a rule no trouble is encountered until you have reached serial dilution number five, when you often find that your patient has about reached tolerance. In starting on number five it is well to begin with half-minim doses, diluted with twenty minims of sterile water, gradually increasing until you have reached two minnum doses at about the fourth or fifth injection, always adding enough sterile water to make a twenty drop injection. If your patient shows signs of reactions or previous reactions or near reactions have taught you that tolerance is about reached, drop back a point or two in dosage and continue with this dose for a few weeks.

For example if you find that you cannot get your patient by twelve minims of serial dilution number five, drop back to eight minim doses of dilution number five and continue for six or eight weeks before trying to increase the dose.

In spite of all caution and close observation of symptoms, reactions will sometimes occur. Ordinarily this accident does little damage. If you are dealing with a patient who has a large amount of tissue involved, a reaction is to be deplored, as it causes destruction of tissue and perhaps the establishment of new foci and the shock alone is bad for your patient.

The aim is always to administer this agent without clinical symptoms. When reactions occur it is always best to put the patient to bed, treat the symptoms and in a few days, these symptoms will subside, when your patient is apt to be as well or better than before the accident occurred.

After a reaction, it is of course necessary to reduce the dose five or ten points according to the severity of the reaction.

In patients who take kindly to this treatment there is no marvellously rapid results, but a gradual getting well of the patient. He soon begins to look better, eats better, temperature returns to nearly normal. Weight increases. Local symptoms subside. It is very apparent that he is recovering.

A word about tuberculin in diagnosis. In adults it is unreliable for the reason that nearly all adults have at some time had a tubercular foci. It may have healed without causing appreciable symptoms and you may be unable to locate the scar, but it has caused the individual to produce tuberculinolysin, and this will cause him to give a positive reaction to tuberculin tests. He may be a perfectly normal and healthy individual and still give a very positive reaction. However, in a patient whom you suspect of being actively tubercular, a positive tubercular test strengthens your position, while a negative tubercular test in all but advanced cases causes you to feel reasonably sure that your patient is not tubercular. Much has been said relative to the Calumet test being apt to permanently injure the eye. I have used this test in more than two thousand eyes and have yet to see a serious or a near serious result from its application.

The general practitioner, family doctor if you please, is the one who should use tuberculin in the treatment of consumption as he is the doctor who sees the cases early. They are at home and can be treated at home. They can generally stay at work and as the treatment requires many months, all this is in favor of the family doctor giving the treatment.

Again I sav that it is an agent productive of great good. It should not be heralded as a "cure," but like fresh air and other hygenic measures it helps the patient to cure himself.

THE LABORATORY VS. THE CLINIC

By GEORGE L. SERVOSS, M. D., Gardnerville, Nevada.

That the laboratory, in connection with medicine is a necessity, is beyond question. However, that we should depend wholly upon the test therein, for a basis upon which to place our ideas relative to drug application is decidedly questionable.

While it is true that the dynamics of many of our drugs may be determined through laboratory experiment it is likewise true that such experiments do not tell the whole story. There are certain drug agents which, excepting as applied in the face of pathologic conditions show little or no action. Consequently in the consideration of such agents, the laboratory findings are inaccurate and misleading.

And then, for one reason or another, some of our laboratories seem prone to make contrary findings, in the face of the fact that certain drugs have given results with the clinicians, time out of mind. The examples of these are to be found in the consideration of cactus and echinacea. Neither of these drugs seem to give any action, whatsoever, when applied to healthy animals, and in consequence the laboratory workers have pronounced them inert. Both of these agents have, however, after years of clinical use and in the hands of many doctors, shown themselves to be decidedly active when applied in pathologic conditions in the human, and absolutely according to indications. Many doctors have, in the face of functional disorders of the heart gotten results from cactus. The laboratory workers have told us that results would have obtained without medicine but we have every reason to believe that such assertions are at fault. It may be true that the "expectant" treatment might have resulted in a return to the normal but many of us have seen that cactus has brought this return about with greater speed. While nothing has been established showing any particular worth in cactus within the laboratories, the clinican has shown that it does the anticipated work and thus is worth while employing. Of course its use is empiric, but what of that, in so long as we obtain the desired results. Echinacea has likewise been pronounced inert within the laboratory walls, but thousands of doctors have found it a "systemic antiseptic" and of great efficacy in those cases in which sepsis happened to be present. They have found that this drug favors elimination and overcomes organic torpidity. It may be possible that both of these drugs are found fault with by the "regular" profession, because of the fact that their greatest use, in the earlier days, happened to be in other schools of medicine.

Owing to the twists, kinks and turns in the intestinal canal the laboratory workers have told us, time and again, that any antiseptic agents employed to overcome sepsis therein are worthless. In spite of this assertion, we find doctors all over the land employing intestinal antiseptics, and to good advantage. We find such agents overcoming many of the acute troubles, due to bacterial action. We find the bowel discharges much changed, following a course of the antiseptics. It may be true that the gut cannot be rendered wholly aseptic, and we grant, for sake of argument, that such is true. Nevertheless, it frequently happens that a diarrhea is checked and not to recur, following the use of a few doses of the intestinal antiseptics. The facts of the matter are, that there has been a revolution in relation to the treatment of gastrointestinal conditions since the introduction of the antiseptics. Not only have diseases of the alimentary canal been corrected through the use of such agents, but we have seen general toxemias overcome with the clearing and cleaning up of the bowel. It has been the clinician who has brought about this better condition. Had we listened to the laboratory worker we would have undoubtedly gone along, as in the past, locking the bowel up with opiates and astringents and been cursed with recurrence after recurrence.

The man in the laboratory will tell you that calomel has no direct action on the liver; is not a cholagog, as we were taught year in and year out. Perhaps he is right in his assertion that it acts through irritation of the alimentary canal, or more particularly the intestinal tract, but in the eye of the clinician it has been seen that the liver seems to be invigorated and stimulated to

action through the use of this mercurial. It may be possible that it has no direct effect on hepatic function, but the clinician believes that it does act either directly or indirectly in the stimulation of the liver. The laboratory workers seem divided as to their opinion of the antiseptic effects of this drug within the alimentary canal, but the clinician most thoroughly believes that it has some such action and effect, as he has seen stinking bowel discharges changed in character, following a few doses of this chemical. Whether it has been the calomel or an increased bile flow that has brought about this better condition is not known, absolutely, but that the clinician has made such determination from his personal observations, is beyond question.

While only a few examples have been cited, it would be possible to go through the entire list of drugs and chemicals and point out case after case, wherein the laboratory workers have been palpably at fault. Because of their contrary findings we find many useful drugs cut out of our official lists, and that without the least heed being given to the arguments advanced by the clinicans.

The systems of determination of drug actions and effects have been decidedly at fault in the past. Too much attention has been given to the laboratory and not sufficient to the clinic. In the minds of those who have a greater or less belief in drugs and their efficacy, it is the general belief that the laboratory and clinic should work hand in hand and that no drug or chemical should be thrown out as worthless until such time as both bands of workers have reported thereon. No absolute conclusions should be reached through experiment chemically, or upon healthy animals, as it not infrequently happens that much fault may be found with work of this character. In many instances it is years after a drug has been found worthy by the clinicians that it finds its way into the laboratory, there to be pronounced worthless. This latter finding is very misleading to those who depend wholly upon the laboratory. If such drugs were tried out clinically at the same time as chemically or otherwise, it is possible, in fact probable, that such agents would be retained. This was a fact with both cactus and echinacea. They had been employed for many years before reaching the laboratory and with seemingly good effect.

There are some men who do not employ a single drug agent unless the laboratory has pronounced it worth while. Such men will place no confidence in the clinician, as they say his work is wholly empiric and consequently unscientific. This may be true, absolutely so, in many instances, but what of that, if results follow their investigations? Much of our internal medication is empiric, even after laboratory findings thereon. We rely to a very considerable extent upon the previous experiences of others in the treatment of all diseases or pathologic conditions.

Another fault to be found with the laboratory lies in the fact that it may be sustaining at one time and the reverse at another. We have taken particular notice of this. Within a year we have seen some drugs cast out as worthless, to be taken up a few months later and praised to the skies, and all this within the same institution. All of this is misleading and one wonders which way he must turn in order to be the least rational in his practices. The clinician, on the other hand, after once determining the worth or worthlessness of any drug agent, either clings to or throws it aside for all time to come. In view of such action within the laboratories it is little wonder that we have so many drug nihilists within our ranks. Unless a man makes his own investigations and that within the sick human, he knows not which way to turn. He may use a drug today, with the sanction of the laboratory and be told tomorrow, by the same institution that such agent is worthless, or vice versa. Because of this is it little wonder that there is any belief in many of our drugs and their efficacy.

Not many months ago a certain digitalis product was pronounced worthless for the simple reason that it was green in color and because of the fact that glucosides of the drug were white or colorless in solution. The manufacturers said that this product was a concentrate of the whole drug and that it carried all the glucosides thereof, but did not claim that the color had been removed. A few months later this same laboratory accepted this selfsame concentrate and placed it on the list of drugs worthy of use. If this agent was worthy of employment at the latter time, when accepted, it was surely equally as good in the first instance. Reports were made at both times. He who read the first and not the second report is still of the mind that this particular product is worthless and will have nothing

of it. In the interum between reports this particular product had been employed clinically by men all over the country and pronounced worth while. We who have kept close watch of such matter have found the laboratory very frequently guilty of change of mind. All of this is bad, very bad. Such action smacks of dishonesty on the part of the investigators, whether any such intent be present or not.

Another fault to be found with many of the investigating laboratories lies in the fact that they are in the hands of chemists, rather than men who have had experience in the treatment of the sick. Their idea of therapeutics, applied, is meager and very frequently they have but little knowledge of pathology. They do not know anything, or at least not very much, regarding the clinical manifestation of drugs, as applied to the sick human. They deal with animals which are phsysiologically healthful and so do not get results, and that very frequently, which might result were such animals ill. Their endeavor seems to be to establish the fact that a drug or chemical will bring about a different physiologic condition, other than normal, in the animal, but not to establish the fact that such agent, or agents, will change the abnormal physiology to the normal. They give little or no attention to morbid anatomy in their consideration. Consequently much of their work is worthless.

While we believe that we should maintain our laboratories, we further believe that their function should end with the determination that a drug is pure and active, from a laboratory standpoint and that their work should stop at that point. With such determination the agent should be turned over to the clinician for determination as to its therapeutic activity. In other words, the laboratory and clinic should be more closely associated; under one and the same roof, if possible. We also believe that every investigating laboratory, in addition to a corps of chemists, should have associated therewith men who have had a wide clinical experience, and that both professions should work hand in hand. Such action would broaden the activities of both and give the profession at large findings and a more conclusive idea as to the value of the agents to be employed by them in the treatment of the sick. All findings should be definite, and no pronouncements should be made prior to the establishment of absolute precision of action of the agents under observation. A drug should not be pronounced worthless today and then reversely a few months later, or vice versa. Let the conclusions be absolute at the time they are brought to the notice of the profession and let the pronouncement stand for all time to come. If this is done the drug nihilist will disappear. We will be better doctors, in that we will be better educated as therapeutists.

RETROPERITONEAL HERNIA OF THE APPENDIX.

Isadore Seff of New York in his article on Retroperitoneal Hernia of the Appendix into the ileoappendicular fossa in the **Medical Record** says that an exhaustive search of the literature reveals but few cases of this sort found at autopsy or at operation.

The small number of cases that have been reported or hernia of the appendix into the ileoappendicular fossa have not been diagnosed as such, but have been found at the time of operation. It necessarily follows that from the complicated anatomy, more or less difficulty will be encountered, not only in locating but also in removing the diseased appendix. He cites an interesting case in his own practice and says: "A careful analysis of the cases of hernia of the appendix into the ileoappendicular fossa shows that they may be classified in the same manner as the diseased appendix found in its usual situations. These hernia may be complete or partial, depending upon whether the entire appendix or portion of it is found in the fossa." He summarizes as follows:

1. Although retroperitoneal hernia of the appendix, and the possibility of their occurrence, especially into the ileoappendicular fossa, is mentioned in most of the works on surgery, it is rather surprising to note how few cases have been reported. It seems that either the condition has not been observed at the time of operation (especially in the cases where the appendix may be dislodged easily) or it is really one of rare occurrence.

2. The diagnosis of appendicitis is established as in the ordinary case, but the malposition of the appendix is discovered at the time of operation.

3. A knowledge of the anatomy of the pericecal folds and fossæ is absolutely necessary in order to locate the supposedly absent appendix, and to employ the proper operative measures.

4. Complications involving important structures in close proximity to the ileocecal junction occur and must be borne in mind.

5. Retroperitoneal hernia of the appendix into the ileoappendicular fossa may be complete or partial.

THE INFLUENCE OF THE GONOCOCCUS IN THE CAUSATION OF STERILITY IN BOTH SEXES

By Joseph Taber Johnson, A. M., M. D., Ph. D., Washington, D. C.

While there are many easily diagnosed and universally recognized causes of sterility the main object of this paper is to discuss the influence of the gonococcus on the male and female generative organs, as one of the chief causes of a condition which is always deplorable and frequently incurable.

That this subject is attracting attention is perfectly evident from the most casual investigation of the medical, religious and secular literature of the day. Sociologists and those interested in the preservation and perpetuation of American families in our country have become alarmed over the constantly diminishing size, especially of the American family. Legislature in some of our states have appointed expert committees to investigate and report. Statisticians, both state and national, acknowledge that "race suicide," as a President of the United States has so aptly called it, is not only alarmingly frequent, but is on the increase. Dr. Engelman, of Boston, stated in a public address in this city that the birth rate in America was lower than that of any European country, except France. He also stated that the birth rate of the American born population was much lower than that of France and that the fecundity of American women was less than that of any other country.

Dr. Ward of New York, writes that the number of children in marriage has decreased from 4.5 in the eighteenth century to 2.5 at the present time, and that, while voluntary race suicide is alarmingly prevalent, there is still the great multitude who, through no wish of their own, are childless, and who are constantly spending their time and money in seeking relief.

It is the involuntary sterility of this vast multitude that this brief paper will discuss. While it is not claimed that sterility is chiefly caused by the germ under discussion, yet the desire is expressed that its baneful influence should be intelligently, scientifically and professionally known and the responsibility in the final production of this lamentable condition placed where it honestly belongs.

One may safely state that gonorrhea is the most frequent of all the adult diseases. The lowest estimate which we meet in recent literature is that at least 75 per cent of the male inhabitants of our cities between the ages of 18 and 28 have had, or now have this disease. Its frequency is placed by many at a much higher rate, varying anywhere from 75 to 95 per cent. It is probable that the latter figure is more nearly correct than the former.

Genito-urinary specialists generally agree that the curability of this infection cannot be assured short of six months' treatment in the milder cases. In the severe degrees of this infection, involving the posterior urethra and seminal vesicles, it is doubtless if a radical and permanent cure can ever be honestly promised which will make married women perfectly secure from subsequent infection.

The statement of Noegerrath in regard to the latent powers of the germ of Neisser has been generally accepted by the profession, and it is now held to be quite possible for a man who honestly believed himself cured, and who for a long time has been free from any gross symptoms to infect his wife.

Wirtheim has demonstrated that in cases even where the husband has been assured by his physician that he was cured, it was still quite possible for the excesses and excitements of the newly married state to revive into virulent activity the latent gonococcus which had been hibernating for years in the deep recesses of his generative tract and which could cause a characteristic specific infection in the newly married woman.

The pathetic part of this unexpected and heretofore misunderstood condition is, that the innocent victim of the husband's early unchastity is frequently accused by him of being the cause of his reinfection. Believing himself free of the disease, he naturally thinks his wife has lapsed from virtue, acquired gonorrhea from some one else and brought it home to him, when in reality just the opposite condition actually exists.

It was until recently believed that "in nine out of ten cases of childless marriages, the fault was that of the wife." It is now

known that in a much larger proportion of cases than formerly was suspected, the husband himself is sterile, and that quite frequently this sterility is caused by the effects of gonorrheal infection.

Dr. Hagner, in a recent paper on sterility in the male, said that "as a net result of many investigations it may be stated, in general, that in cases of unfruitful marriages, the husband is the sterile member of the family in about one case in six."

Dr. Hagner quoted the statistics of Kehrer on childless marriages, who believes that their cause if sought for would be found much oftener on the side of the man. He found that in 96 cases of sterility in man, 63 had a history of gonorrhea, with infection of the epididymis and prostate. Noegerrath found unfruitful marriages in a series of 14 cases to be the fault of the male, and Gross in 192 cases found the male deficient in 18 per cent. Brothers places the responsibilty with the man in 20 per cent. Reis says it is 30 per cent. Kehrer in 31.5 per cent. Lier and Asher found that out of 424 childless marriages 169 or 40 per cent were due to sterility of the husband. Vedder of Christiana in 310 cases, by including all cases of sterility in women due to gonorrhea acquired from their husbands found the man at fault to the extent of 70 per cent. The principal cause of sterility in men is stated to be bilateral gonorrheal epididymitis. Bengler in 1898 found that among soldiers in the German Army, who had been married three or more years 10.5 per cent who had suffered from gonorrhea without epididymitis were childless and 41.7 per cent of those who had had bilateral epididymitis were childless, and adds that it will be seen from all statistics that epididymitis is by far the most common cause of sterility in the male. Men are therefore, from a consideration of the above statistics responsible for from 18 to 20 per cent of the sterility of the world, and in the language of Hagner, the "principal cause of sterility in men is bilateral gonorrheal epididymitis." Still greater responsibility might justly be placed upon the shoulders of these husbands who through ignorance or thoughtlessness or unbelief have infected their innocent wives and thus brought about conditions which have resulted in their unwilling or enforced sterility. Gonococcal infection, Morrow tells us, a more potent factor in the production of involuntary race suicide, than syphilis, by the frequent sterility induced in both sexes, but much more frequently in women, on account of the ascending destructive and incurable infection of the tubes and ovaries. Gonorrhea is the chief cause of the sterility of the prostitute class.

Gonorrheal salpingitis whether it results in pyosalpinx or tubo-ovarian abscesses or not usually destroys the ciliated epithelium of the tube or so cripples the ovary, that subsequent conception and normal gestation are well nigh impossible.

Gynecologists do not profess their ability to restore a fallopian tube which has been infected by the gonococcus to its normal condition. Sterility or some more positive and destructive condition is therefore the very common legacy bequeathed to the female victim of this disease.

A specific endometritis must always be the cause of a gonorrheal salpingitis.

The frequency of gonococcic infection in married women has been brought very prominently to the attention of the profession by Dr. Cleveland in his Presidential address to the American Gynecological Society, and in the report of the "Committee of Seven" on the prophylaxis of venereal disease in New York City the latter of which indicates "that nearly 30 per cent of venereal infection occurring in women in private practice in that city, are communicated to them by their husbands. Noeggerath stated in 1876 that of every thousand married men eight hundred have had gonorrhea with which a great majority of their wives have been infected. Another writer of large experience thinks that fully seventy per cent of all women, who came to his dispensary and hospital services for treatment, were respectable married women, who had been infected with gonorrhea by their husbands. Janet in his "Social Defense Against the Venereal Peril," in speaking of its frequency, says, "If we compare from a social point of view the importance of gonorrhea with that of syphilis, gonorrhea is to syphilis as 100 to 1, not only from the standpoint of the number of persons attacked, but also from the standpoint of the gravity of the lesion and their perpetuity * * * which today gives to the surgeons three-quarters of their work, and conducts finally both men and women to sterility."

Noeggerath has expressed his belief that 50 per cent of female sterility is caused by gonorrhea. Neisser places the percentage from this infection at 40 per cent, while Gruenwald, Kammera and Crolax report 53

per cent, 83 per cent and 40 per cent of endometritis, mesometritis and peritonitis of gonorrheal origin as causes of sterility in the female.

The results of gonorrheal infection of the female pelvic organs are inseparably connected with the discussion of any and all phases of this question, and it is practically impossible for one who has written much on this subject to avoid or to state old points in new or different language.

The phase of the gonococcus infection question which especially interests us at the present time is its power to cause sterility, which in addition to its inhibiting effect upon the normal function of the female generative organs, is shown in the great number of unsexing surgical operations which are required to save the lives, and restore the health of a very large number of infected women. The oft repeated statement is familiar to the reader that at least one-half of the abdominal operations of the world are necessitated on account of gonorrheal infection. While this statement is very startling, the sad part of it is, that it falls short of the actual facts, as reported by a large number of abdominal surgeons.

Mann of Buffalo and many other gynecologists hold that as gonorrheal endometritis is nearly always the cause of pus tubes, for the complete cure of the patient the practically incurable gonorrheal uterus, must also be removed. It goes without saying that all of these removals of the gonorrheal uterus or its appendages, are the primary and direct cause of all this class of "mutilating and unsexing surgery" as it is sometimes called.

The sterilizing influence of this specific infection is seen again in the production of what has come to be known as "one child sterility." It is quite possible for a woman who has gonnorrhea in the anterior portion of her birth canal to conceive, and to give birth to a child, though it has a very dangerous gauntlet to run, and also has to escape ophthalmic infection, which the statisticians tell us is the cause of about 30 per cent of the blindness in this country. In a previous paper upon the effects of gonorrhea on the female generative organs it was stated that we had abundant testimony that specific infection frequently ascends to the pelvic organs after parturition when this infection only existed below the internal os previous to labor.

The way seems to have been opened by the parturient act, though slight, traumatisms in the endometrium for the lodgement, subsequent development and the multiplication of these germs, and their further ascent to the tubes and ovaries. Morrow declares that "after accouchement the tissues of the genital organs are in a peculiar state of inhibition and infiltration, which offers to the gonococcus a favorable soil for its proliferation, and that the aptitude of a gonorrheic woman for conception, is often extinguished by the first pregnancy, the one child representing the sum total of her reproductive energy."

The pernicious influence of the gonococcus is again shown as a sterilizer in the causation of many more abortions than have heretofore been attributed to it.

Sanger contends that "as many abortions are caused by gonorrhea as by syphilis." Noeggerath states that "of 53 women known by him to be suffering from the effects of gonorrhea, 19 aborted."

Frughinsholz found that in 101 pregnancies occurring in gonorrheic women, 23 aborted, while Williams insists that 73 per cent of all abortions are due to endometritis, which is without doubt chiefly caused by gonorrheal infection when not due to puerperal sepsis.

While many authorities might be quoted in favor of this proposition it is difficult to prove its direct causative effects, but the belief exists in the minds of modern writers on this subject that there can be no doubt that gonorrhea is very much more frequently than was formerly taught, the cause of abortion. Sterility is the rule after a gonorrheal abortion or puerperium.

The cause of extra-uterine pregnancy has never been definitely formulated and clearly stated in the text books on obstetrics or gynecology, but is claimed by recent writers on social diseases and abdominal surgery that gonorrheal salpingitis plays an important part in the etiology of this condition.

Modification in the epithelial lining of the tubes occurs in mildly latent cases which may arrest the descent of the ovum to its natural bed in the uterus, and thus becomes directly responsible for its tubal development to the extent that it is the cause of the death of the foetus of mutiiating operations and of fatal results to the mother; just to that extent it becomes another factor in the causation of sterility.

M. Paul Petit sums up the argument in this wise: "If this nuptial microbe, appar-

ently benign, is sufficiently attenuated to not produce peritonitis—to not shut the tube at either of its ends (closure fatal for race, but salutary for the woman), if nevertheless it happens that the delicate cells have lost their cilia, charged to secure the advance of the fecundated egg, this is arrested in the channel, through which it cannot pass, and notwithstanding the heroic efforts of nature to produce a compensatory hypertrophy, the drama still proceeds. In the place of becoming enfeebled, the virulence of the microbe becomes cataclysmic, extra-uterine pregnancy much more common than is usually supposed, becomes a fact, the infant dreamed of, still in its embryonic state, has become for its mother a malignant tumor, and if it does not kill her suddenly by internal hemorrhage when in apparent perfect health, which is fortunately quite rare, too often it offers her to the reparatory knife of the surgeon, and in the more fortunate cases immobilizes her for many months on a bed of suffering."

We have the authority of Jacobi and Currier for the statement that the valvo-vaginitis of little girls, which is generally of gonorrheal origin, has the effect to retard and frequently to prevent altogether the normal development of the uterus and its appendages. Women with undeveloped or infantile uteri or ovaries, are not only great sufferers from amenorrhea and dysmenorrhea, but are at the same time unable to conceive, or if they do, to produce a live child. This condition amounts practically to sterility, and its first cause is gonorrheal infection during their infancy or childhood. Recent textbooks on pediatrics refer to the vulvo-vaginitis of little girls as the most frequent and troublesome of institutional diseases, and that in the great majority of cases it is caused by gonorrheal infection.

It is not of course suggested that their infection results from any sexual relation with the opposite sex but is communicated from one to another in a great variety of ways.

Caille gives an example in his treatise of the spread of this infection in a public institution in New York harboring 850 children. In 130 cases a so-called leucorrhea developed, which proved, on investigation, to be gonorrheal in nature; much more similar evidence could be produced.

In addition to the above charges in the indictment against the "nuptial microbe," as M. Paul Petit calls it, we have the large number of indeterminable cases, where no surgical operations are performed, where no organs necessary to procreation are removed, and yet, the women are living lives of chronic invalidism which too frequently means, lives of chronic gonococcic infection, the ultimate effect of which is to inhibit any further conception.

The title of this paper suggests nothing in regard to prophylaxis or treatment. The subject is too large and uncertain for brief discussion. There are so many sides to it and so little agreement as to what is safest and best to recommend, that little has been accomplished. The question would open up the relations of the state and the attitude of society toward attempting somehow, and in some way, to control or limit or abolish the social evil.

The most natural suggestion for the writer of this paper to make would be the inauguration of a campaign of education which would take from the shoulders of the profession the burden of responsibilty they are now compelled to bear, of allowing the constant excuse of ignorance to be longer pleaded by the guilty as well as the innocent victim of venereal infection.

We should not give our sanction to the marriage of any one known to have been recently infected, until the use of modern methods of diagnosis has proved the absence of specific germs. And medical men should explain to young men they attend or come in contact with, the real dangers of venereal infection, and the necessity of a thorough cure. Hospitals should treat these cases to a cure. The safety of the state and society requires the protection of the ignorant and innocent from specific infection.

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SCOPOLAMIN POISONING.

M. T. Sudler, Lawrence, Kan. (Journal A. M. A.), reports a peculiar case of poisoning from ½ grain of scopolamin, that had been substituted by mistake, for homatropin in an application to the eye. The powder was properly labeled, however, but this was not noticed by the oculist. The patient within a few minutes was seized with dizziness and active delirium; the pulse came rapid and at times indistinct. One-thirtieth grain of strychnin was given without any other medication and the patient gradually improved. He left the hospital on the third day. There is no evidence of any permanent injury.

TREATMENT OF TUMORS OF THE BLADDER

By A. C. Stokes, M. D., Omaha, Nebraska.

Treatment of neoplasms of the urinary bladder offers many difficulties. It is often unsatisfactory. Physicians do not see cases of tumors of the bladder until late. They come for symptoms of metastasis, or they have severe urinary disturbance, and even then radical treatment is often postponed because of a feeling of the possible unsatisfactory outcome. It is my purpose in this paper to spend the time allotted in the discussion of diagnosis and treatment, and not of pathology. Suffice to say that most tumors of the bladder are papillomata or adenomata in the beginning, but usually develop malignant characteristics later.

The diagnosis of a tumor of the bladder must depend upon urinary symptoms for its earliest indication. The final demonstration must depend upon the use of the cystoscope. Perhaps the most constant early symptom of tumor in the bladder is hemorrhage. This may be small in amount or profuse; the amount of the hemorrhage bears no relation whatever to the size of the tumor. Urinary tumors oftentimes have very little, if any, hemorrhage, while there are instances of very small tumors accompanied by a very great deal of hemorrhage.

The second most constant symptom of tumor of the bladder is undoubtedly frequent urination, particularly in the day time, not necessarily during the night, and often followed by tenesmus.

These two symptoms are usually the symptoms that bring the patient to the physician. If his urinary history has shown either of the two symptoms, a careful study of his bladder and kidneys should be made by all the known methods for diagnosis. If a tumor of the bladder is present the simple introduction of the cystoscope will solve the entire question. The greatest trouble is that patients complaining of a slight amount of urinary frequency or tenesmus are frequently not fully examined for some time, or, if they have a little hemorrhage at times it is allowed to pass until by the time the actual diagnosis of tumor of the bladder is made the growth has involved the tissues to such an extent that it is almost impossible to offer hope.

This paper, then, contains not only the discussion of the treatment of tumors of the bladder, but a plea for the free use of the cystoscope, and a careful study of the urinary organs when the slightest symptoms appear. The later and more definite symptoms of tumor of the bladder are not necessary for us to discuss at this time, We only desire to impress upon you the fact of the necessity of early diagnosis.

The successful management of bladder tumors, like the successful management of all such growths in the human anatomy, depends on an early diagnosis, at which time proper treatment and proper management may continue the life of the patient to an ordinary expectancy.

Treatment in general may be divided into palliative and curative.

By palliative treatment we mean treatment for symptoms the result of tumors, such as hemorrhage, pain, tenesmus and retension, without an endeavor being made to remove the growth. The treatment of such conditions varies from the simple introduction of the sound to cystotomy for drainage. The various methods between these two extremes are electrolization, fulguration, cauterization, use of astringents, dilation, etc.

Our attention is directed toward the problem of radical removal of the tumors. Many methods have been devised and used. We may mention the following:

First, removal of the tumor through the dilated urethra in the female; removal of the tumor by vesico-vaginal incision; perineal cystotomy; operative cystoscope of Nitze; destruction by the fulguration process of Beer; removal by suprapubic cystotomy; removal by partial cystectomy; removal by complete cystectomy and nephrostomy.

The removal of the tumor through the dilated urethra of the female is obsolete, unless the tumor extends pretty far down into the urethra; in which case such a removal might be justifiable.

The vesico-vaginal incision is very rarely used, and is, in our judgment, practically never justifiable and may be discarded, as may also the perineal removal of tumors.

Nitze was the first to devise a method of operating by means of a wire running through the cystoscope, making a loop within and attached to a screw on the cystoscope from within. Nitze was able to grasp a large number of small tumors within this loop and clip them off, or slowly pull them out by the roots, and either remove them by another hold with the loop or allow them to pass at urination. Nitze claims that of 104 cases, 84 per cent remained entirely well after such manipulations. This method of treatment, however, can only be applied to that pedunculated variety which would allow themselves to be grasped by the wire loop. Sessile varieties would under no conditions be desirable for such treatment.

The fifth method of our number is that of fulguration. The principle of fulguration as described by DeKeating-Harte consists in an electric current with an exceedingly high voltage of twenty to thirty thousand with a very low amperage, about 300 to 400, and an interruption of about one million times a minute. Such a current applied to a growth by means of a spark from four to five centimeters in length does not char or burn the growth, but shrivels it without any carbonization.

Beer, of Mount Sinai Hospital in New York, was the first to call attention to such treatment in tumors of the bladder. He applied it to various kinds of tumors, claiming that such a current was a valuable treatment for carcinoma. However, in his last paper read before the Section of Urology in the American Medical Association, he receded somewhat from this position, but still claimed it to be the best method of handling small nonmalignant tumors of the bladder. We believe it to be very valuable as a curative measure in the very small tumors under certain conditions, and it may possibly inhibit the growth of carcinoma and extend the life of the sufferer several years. It is a simple method, easy to use, has very little pain, and no mortality.

The removal of the tumors by suprapubic cystotomy is at the present ime the most general operation done, and, indeed, it seems to the writer that it is one of the most difficult operations in surgery, because no two tumors are exactly alike, and no operation exactly duplicates another.

Certain principles may be laid down:

First, regarding the approach to the bladder: Many writers in the last few years have called attention to the fact that in operating upon tumors of the bladder one must use as large an incision as is possible. It is not necessary or advisable to keep within the space of Retzius in front of the peritoneum, but to extend the incision so that we may approach the bladder from all sides. There is no great danger in this, and often great good may be done.

The Germans recommend the cross suprapubic incision—i. e., the incision parallel to the symphysis, and we may say that in one of our own cases this proved very satisfactor. One can keep outside the peritoneum and at the same time have a good view of the bladder. Tuffier makes a "T"-shaped incision extending the length of the "T" upward between the recti muscles. The location of the incision and the extent of the incision must depend upon the location of the tumor and what the operator intends to do.

If the tumor is a small one in the vertex of the bladder, an ordinary suprapubic incision in the space of Retzius is the only one necessary and a portion of the bladder wall may be removed. The peritoneum may be easily dissected back from the fundus of the bladder nearly to its base. It is only necessary to open the abdominal cavity when the base of the bladder is affected. By the use of the cystoscope in the bladder when the incision is completed down to the bladder, and with an assistant looking into same, the relations of the tumor may be located from without by making a dimple in the external surface of the bladder and observing where it strikes the tumor from within, and when a correct point is located on one edge of the growth this point is marked by a stitch, and two or three of such points are located and the tumors thus defined on the outer surface of the exposed bladder after Hagner's method.

When the tumor is single and confined to any free portion of the bladder, partial resection of the bladder may be done with perfect freedom.

When small sessile tumors are dotted over different parts of the interior surface of the bladder the mucous membrane may be dissected off over very large areas of the bladder, for it will soon return. Pilcher reports one case in which he dissected off nearly the entire mucous membrane.

Some tumors arise from the prostate. When such is the case removal of the prostate is indicated.

Tumors which begin at the junction of the ureter with the bladder often require

section of a portion of the bladder at this point. In such cases the ureter may be transplanted into the bladder sometimes with good results, but if not, a nephrostomy may be done, or the kidney removed on that side.

The total removal of the bladder is in itself not an extremely difficult procedure, but the disposition of the ureters after this is quite another problem. If the ureteral openings are not affected, a triangular portion of the bladder may be transplanted into the rectum. When, however, the ureter is affected it will have to be cut a few centimeters above the bladder and then the problem becomes very much more complex.

Various methods have been devised under these conditions, such as implanting into the larger bowel, into the sigmoid, into the groin, and into the back. Watson recommends double nephrostomy before removal of the bladder is begun where portions of the ureters must be taken. Any method of procedure must depend upon the careful determination of the character, extent, location and best method of approach to the tumor. The cystoscope is the most valuable aid in this condition. Any other method which may throw light upon problems to be met before operation is begun must be grasped, such as the X-ray, rectal examination, etc.

Each tumor of the bladder is a law unto itself and can only be met as an individual case, and treated as the pathology, anatomy and physiology of this particular neoplasm indicate.

THE GOOD POSTURE SOCIETY.

A society has recently been organized, according to an editorial in the New York Medical Journal, with the purpose of making us all sit up straight.

This organization has a large and important field in which it can at least keep things agitated. The field is broad, extending from the study and prevention of inherited faults to the mitigation of fatigue and the suppression of the manufacture of uncomfortable furniture. Bad posture is begotten by atavism, by heredity, by improper and insufficient food, by lack of exercise, by occupation, by trauma, by disease, by poor sight, by fatigue, by imitation, by bad lighting, by chairs which are ill adapted to the sitter, by heavy and ill fitting clothing, etc. We have the lordosis and accompanying cyphosis which result from a mesentery attached, as in our four footed ancestors, so low down as unduly to distort the lumbar spine. No amount of corrective exercises can compensate for this fault, which is in itself a compensation for mechanical arrangements within the body. This hereditary condition may possibly be handed from parent to child, and there is at least a cyphosis which, no matter what its anatomical origin, is hereditary. A congenitally long or short iliofemoral ligament, allowing the pelvis to tip too far back or to be drawn too far forward, is undoubtedly the root of much bad standing posture, and there are faults of the spine from congenitally ill shaped vertebræ. We recently examined a case of marked cyphosis in an otherwise normal boy of ten years, in whom we found no detectable cause for the deformity until we glanced at the father. The cause was then evident, for the posture of the child was a counterpart, save that it was not so bad, of that of his father. What heredity had to do with this case we do not know, though we suspect that imitation had much more. The imitation of a favorite teacher or other friend who stoops is a not uncommon helping cause to bad posture. We all straighten our spines more in erect company, and relax in relaxed company.

Not so much spinal deformity results from rickets as one might imagine, but inadequate food and too much exercise help to bring on fatigue, and fatigue is at the bottom of much bad posture. The long maintained attitudes demanded of the young at school bring on fatigue of the muscles of the spine, which ends in stretching of the spinal ligaments, with resulting abnormality. It is not so much the shape of the school seats which is at fault; the disuse of certain muscles and the stretching which may go with it are a cause of "angel wing" scapulæ and of the round shoulders and cyphosis which may accompany this condition. The near sighted person projects his head and neck forward in an unconscious effort to get nearer the object of vision, and the head and neck tend to stay forward. In some manual trades—if there are any left—the work itself brings on bad posture, and in our factories the ill fitting seats, together with fatigue, are responsible for much deformity in frail women.

Ill fitting chairs are a source of much bad posture. We make an effort, often with mistakes, to have the child properly fitted with clothing and shoes, but little thought is taken to have his chair of proper size and shape. There are high chairs for adults, usually fitless. For chairs between these extremes, for chairs for growing children, you will search the furniture stores in vain; possibly our new society can induce them to put chairs for the period of adolescence upon the market. It would be a great boon to the race also if they could be induced to make chairs that fit adults.

Bad posture is often the result of the complex of many factors and can be helped only by getting at the causes. The Society for the Improvement of Posture will be worth while if it does nothing more than impress upon the public that the correction of bad posture cannot be brought about by merely telling the patient to sit up straight.

THE INFLUENCE OF A GONORHEAL PROSTATITIS UPON LATER LIFE

By GEORGE G. MCCONNELL, M. D., Medical Examiner in Chief, Insurance Department, K. of P., Indianapolis, Indiana.

In reviewing a pen picture of the physical condition of something over two hundred thousand men and, in addition, having had an opportunity of passing on many thousand death proofs, I have been forced to the conclusion that there is not infrequently a later date sequel to a specific urethritis, which has received scant attention by authorities and less attention by practitioners.

Aside from the acute complication of gonorrhea by a prostatitis, from which recovery (?) takes place in a reasonable time, and aside from the senile prostatic troubles of the old man, there is an intermediate history of trouble with this gland, the origin of which, perhaps, has not received the proper attention.

Ignoring all traumatic causes and eliminating such cases as may readily be called occupational factors, many men from the age of forty or even under, up to the age of sixty, give a history of prostatic trouble ranging in severity from the very slightest feeling of uneasiness at the neck of the bladder to a well defined prostatitis, complicated with cystitis, nephritis, pus infection, etc.

Age alone will not account for the condition and nothing in the occupation or present habits tends to throw any light on the matter, but careful inquiry hardly ever fails to elicit a history of a former specific urethritis, complicated with a more or less severe prostatitis at the time, from which **apparent** recovery was made—but it is more than likely that a careful examination at any time during the years elapsing between the attack of gonorrhea and the onset of a decided prostatitis somewhere between the ages of forty and sixty, would reveal a possible enlargement and a positive tenderness of the prostate gland.

During the last few years there has been an alarming increase in the death rate from nephritis, which may well lead investigators to study the relationship existing between a gonorrhea of early life and a nephritis of middle life.

While it is well known that the "high tension" lives led by our business men is very conducive to organic troubles, of which nephritis is not one of the least, this will not account for many of the cases of prostatitis, cystitis and nephritis.

It might seem strange at first thought, that this trouble would lie dormant for five, ten, twenty or thirty years, with no appreciable evidence of its presence, and then arise as a ghost of youthful follies—but that it does, there can hardly be a doubt.

It may be that throughout all these years there is constantly present but the very slightest evidence of the danger—just the least fullness at the neck of bladder, with, perhaps, a slight increase in frequency of urination, just the least suggestion of loss of power to delay the emptying of a full bladder, none of which have given any appreciable pain or have been given more than the most superficial passing notice until later, when more marked conditions arising give these forerunners a greater significance.

However, there may be no symptoms, even of the slightest nature, until after having passed the age of forty, and having reached that age in life when every organ in the body is more apt to show degenerative changes—when the circulation is less active, when blood vessels are becoming less elastic, then the prostatic gland, which is prone to hypertrophy in **all** men of advanced age, will the more readily be the first to suffer when the proper foundation is laid in youth.

Not all of such cases pass on to the extreme condition, for the records show all stages of development after age forty, from comparatively little discomfort to the most distressing conditions, and while many such cases are not seen at all by a physician, many of them first come under the care of a physician for a supposed mild or severe cystitis, perhaps, seemingly complicated by a prostatitis, in **reality caused by** the prostatitis, and I am more than positive that many of the cases coming under the physician's care as a nephritis are in reality the result of an acute exacerbation of an old trouble of the prostatic gland (so

susceptible on account of an earlier invasion of the gonococcus) followed by a cystitis, gradually extending to the kidney, where it presents all the evidence of an original nephritis. The earlier and warning troubles are lost sight of entirely, or are viewed in the light of complications.

My only object in writing this article is to call attention to the comparative frequency of just such a chain of conditions as has been outlined, a sequence which may readily be overlooked by the physician, as, in the vast majority of cases, the physician treating the youth does not have the opportunity of following that case throughout life; and the physician's case of later years are usually those who have been patients of another physician in earlier years, so that the connecting link might readily be overlooked.

The possible serious consequences of a specific urethritis can hardly be overestimated and between those who think it is a readily curable disease and those who think it *never* is entirely eradicated, the latter probably have the best of the argument.

At least, no physician who does his duty will ever fail to impress his patients of this class with the *possible* seriousness of complications and will never make light of the trouble.

The remedy lies more in the prevention than in the cure, and while the great wave of "Eugenics" which is now sweeping the country, may bring some relief the writer is seriously distracted for conclusions as to the relative value of *too much* or *too little* public education on this subject.

Be that as it may, prevention is the thing sought: Failing that, as we probably will to a considerable extent so long as there continues to be male and female, our next step is to eradicate from the minds of the young men that specific urethritis is a simple trouble, to be given even less attention than a severe "Cold."

THE CARE OF THE PELLAGRIN.

Dr. Isadore Dyer summarizes the general care of the pellagrin as follows:

(1) Insist on cheerful surroundings; have the patient adopt the motto, "Look up" and adhere to it. Establish a morale from the beginning by an optimistic view of the prognosis. Warn the patient of a long time treatment, of relapses, and of the need of proper care and **treatment between** the attacks.

(2) Keep out of the sunlight. Spend the day between sun up and sun down on the shady side of the house, with the light obscured. Also keep out of the kitchen and way from over-heating occupation.

(3) Keep the patients out of bed, so long as this is possible. Do not let them go to bed, except to rest, or when the symptoms of the disease compel.

My patients are enjoined to go out early in the morning before the sun is up and in the evening after the sun is down. The moderate exercise, contact with well persons, and the general moral uplift is an asset in the treatment; it prevents or discounts despondency.

(4) When the acute symptoms are controlled, reduce the quinin hydrobromate to two grains three times a day and give general tonics, as the glycerophosphates, lactophosphates, iron and manganese compounds.

Now arsenic is permissible and serviceable. I usually give the sodium arsenite with other tonics, as:

Liquor sodii arsenitis.....gtt. iii
Tinct. nucis vomicæ.....gtt. x to xv
Tinct. gentian comp.....gtt. xv
Tinct. cinchona comp.....gtt. xv
Syr. pruni virginian.....qs. 1 dram
M. et Sig: In water after meals.

Blaud's compound pills are also useful.

(5) The improvement in appetite, strength and desire to take gentle exercise are signs of improvement. No better criterion, however, can be found than the gradual gain in weight. As the loss in weight is a constant factor in the syndromes of pellagra, so the obverse is more than in its importance with relation to a return to normal.

(6) The most important period of treatment in most cases of pellagra is during the usual seasons of attack, or in the months of cold weather. Every effort should be made to bring the patient up to normal of resistance. The physician should see the patient often enough to maintain a psychological relation which will permit control.

The dietetic care, the medicinal treatment (tonics, regulation of functions, etc.), should be systematic. The weight should be recorded regularly so as to see what normal may be maintained. As the warm season approaches any loss of balance can be noted and met. Often a change of climate for these patients, treated already during the first attack, will obviate a recurrence.

In conclusion, we might submit that pellagra is a toxemia, in its development, taxing all the vital forces of the victim of its infectivity, over-coming the resistance of the patient in great or less degree, as the extent of the attack is measured. Until the cause is known and a specific treatment follows, we must use our intelligence in building on the patient's own powers of resistance, by training him in habit, diet, and in physical well being, to a point where he can defeat the forces of the organized disease.

This must be accomplished, not with any one remedy, but by all measures indicated in the individual case; complemented with any means or remedy which in the particular case may seem to be specific.

ABSTRACTS

CONSERVATION OF VISION.

Dr. Frank Allport of Chicago, read a paper at a recent meeting of the Chicago Medical Society on "Conservation of Vision," in which he said that societies for the conservation of vision have been formed in various portions of the United States. They exist under different conditions. The membership in some is medical and in others both lay and medical. In Pennsylvania, Indiana, Missouri, etc., the organization exists as a committee of the State Medical Society; in New York, Illinois, etc., independent associations have been formed; in Ohio the "commission," as it is called, is a part of the State Government. There is also a National Association, independent in its nature, and mixed in its membership. Some of these associations, such as New York, Massachusetts, Maryland, Ohio, etc., are doing energetic work, while others are inactive and almost useless.

At the 1913 meeting of the American Medical Association the Council on Health and Public Instruction appointed a committee on Conservation of Vision, of which the speaker was appointed chairman. The object of this committee was to produce interest and action in conserving vision, and endeavor to concentrate under the auspices of the American Medical Association activities calculated to preserve the sight of this and coming generations. The work of this committee began by utilizing the machinery of the Association. The Council on Health and Public Instruction sends out each week a sheet called The Press Bulletin. This is sent free to nearly six thousand newspapers and the printed matter upon its face can be used by the papers as editorials, news matter, etc. This printed matter consists of short, plainly written articles on health topics. They are unsigned. The Council also employs clipping bureaus and through them it is ascertained that these articles are very extensively used and are shaping public thought along medical lines in this country. The committee on Conservation of Vision has an appropriate article in the Bulletin each week, and it is felt that this is a most important part of its work, as it reaches so many people, and is under direct control.

The next work of the committee was to write, print and circulate twenty pamphlets on popular eye topics. The authors' names are printed on these. They are short articles, plainly written, so that non-medical people can easily understand them. They also are well illustrated. They are for sale at five cents a copy, but are also freely given away on proper application. Sets of these pamphlets have been sent to public libraries, women's clubs, teachers' institutes, State Legislatures, health boards, etc., all over the United States.

Next, it seemed desirable to the committee to create a national sentiment in favor of conservation of vision, and for this purpose it was determined that lectures on this subject should be delivered in each State. A lecture bureau manager was appointed in each State who was willing to superintend the work in his State. Where a State organization for conservation of vision existed, one of its officers was selected to carry on the work, but where no such organization existed, a prominent, energetic and willing oculist was selected. This "State Manager," as he was called, was to enlist the assistance of all the oculists and state medical societies, both ophthalmological and general. Prominent and energetic oculists were to be found to give lectures on the conservation of vision, such lecturers to reside in different portions of the State, so that long and expensive journeys should not be necessary. That State Manager corresponded with local medical societies, women's clubs, teachers' institutes, boards of health and education, etc., and arranged for these lectures by invitation. The expenses of the lecturer were to be paid, if possible, by the organization issuing the invitation. The lectures were to last about one hour, and were to be given in plain and unscientific language, with a discussion following. In order to make these lectures easy to deliver, the committee prepared a box of about thirty colored and uncolored stereopticon slides and sent them to each State Manager to be loaned to his associate in the work whenever the lecture was to be delivered. In addition to this a pamphlet was prepared entitled "A Plan of Campaign for the Conservation of Vision." This pamphlet contained a full description of the plan and what it was proposed to accomplish. A kind of skeleton lecture was included in it, suggesting subjects, etc., to be referred to in lecturing. These pamphlets were freely dispensed to all State Managers, who distributed them to their associates in the work. Each lecturer was also placed on the mailing list for the Press Bulletin, and also received a complete set of the "Conservation of Vision Pamphlets." Quantities of the Vision Charts for Schools were also sent into each State. While these lectures were intended to cover all avenues of vision conservation, it was especially hoped that it would result in the use of the Crede treatment of the eyes of all new-born babies; in the lessening of shop accidents; and in the annual and systematic examination of all school children's eyes by school teachers; for it is reasonably certain that if these three procedures could be universally adopted, eighty per cent of all blindness could be eliminated from this country. The establishment of measures referred to above could be accomplished at an anuual cost which would not exceed $25,000. It costs $15,000,000 a year to care for the dependent blind in this country alone, to say nothing of those children more or less incapacitated by defective or diseased ears, noses and throats.

Emphasis should be laid on several points connected with the annual, systematic examinations

of school children's eyes, etc., by school teachers. First—The examinations are simple and require no medical education. Second—Teachers are not expected to make diagnoses. They merely ascertain the fact through the questions that something is wrong, and leave the rest to the doctor selected by the family for consultation. Third—A child can be easily examined in five minutes and each teacher should examine the children attending her own room. By subdividing the work in this way, all the children in any city of any size can be easily examined in one day—a definite day—in the early Fall—of each year should be set aside for these tests in all cities. Fourth—These tests not only benefit the children by leading to the correction of their eye, ear, nose and throat defects, but the correction of these defects benefits the teachers because such corrections usually add materially to the intellectual and moral character of the children, thus rendering them much easier to teach, and more pliable to discipline. Teachers should, therefore, be glad to do this work. Fifth—There is no objection to these examinations being made by doctors or school nurses. This, however, would cost large sums of money and Boards of Education and Health are never allowed enough money for even ordinary purposes. This is a fact which might as well be frankly recognized and acted upon. The teachers are capable of doing it, and it takes no extra time. It is a benefit to themselves as well as to the children. It costs practically nothing; therefore, let it be done in this way.

The question may be pertinently asked, "What has been the result of the State lectures?" This has varied greatly in different States. The State Managers accepted the work voluntarily after the ideals were thoroughly explained. After a promise of conscientious work was given, the box of slides and printed matter were sent, representing an outlay of about twenty-five dollars for each State. In some States this ended the matter, and so far as the Chairman of the committee knows, no work whatever has been done in some States, no lectures delivered, and nothing accomplished. Letters have remained unanswered, and appeals unheeded. This has, therefore, been rather discouraging. In other States the work, for one reason or another, has been delayed, but still something has been done, as many lecture engagements have been made for next fall. But, the speaker was glad to say, in most of the States honest, conscientious work has been accomplished and excellent results achieved. The results are, of course, not all that could be desired, but still, considering that this is the first year of the committee's existence, Dr. Allport felt that he should be very grateful to those gentlemen who have given this project their time, their labor and their means.

As to the future of the work, he would recommend:

1. The continuance of a weekly article on the eye for the Press Bulletin of the Council on Health and Public Instruction.

2. A few more Conservation of Vision Pamphlets on interesting subjects and the increased circulation of these pamphlets.

3. The continuation of the Conservation of Vision lectures in the various States. Many more of these lectures should be delivered, and the State Managers should be changed where the present managers have not shown a reasonable interest in the work. From twenty to twenty-five new slides for the stereopticon should be made, that will more fully illustrate the subject.

4. The speaker was at first in favor of encouraging the formation of State societies for the conservation of vision, these societies to possess complete self-government, but all of them to declare themselves in affiliation with the committee on Conservation of Vision of the Council on Health and Public Instruction of the American Medical Association, by a slender thread of connection. He was also in favor of asking those States already possessing State organizations to join with the committee in the same sort of affiliation. Also of proposing an annual meeting of this affiliated organization, and the formation of a national body of this nature for the conservation of vision. But time and experience have considerably modified his views and he now believes that other plans are better.

First—There is already a national society of this nature. It is, it is true, highly inactive, but still it exists and should, he believes, be encouraged to an awakening activity. Second—Local conditions in many of the States are not conducive to friendly assistance. However well meant, it is in some States regarded as meddlesome interference, as an effort to rob existing organizations—whether active or lethargic—of some credit, which it is felt should remain with the local organization, and not be shared with even a well-intending interloper. These views are but natural to those people who have worked hard to develop a praiseworthy State society. They want the credit for their work, and should have it, and he believes it is better that they should be let alone, and not asked to merge their identity or work with that of another organization. His recommendation, therefore, for the future is that this committee shall do what it can to inspire the formation of State Conservation of Vision organizations, either as independent medical and lay societies, or as commissions of the State governments. It should stand ready to advise and assist such work in any possible manner, but it should not suggest a formal connection of any description with the committee of the American Medical Association. This committee should also be equally ready to advise or assist State organizations that already exist, and should cooperate with them in any way they may properly request.

He would also recommend that the work of the committee be extended, so that it shall become a potent power in the community. It should have a central office, with a paid, interested, intelligent, energetic secretary, who could and would from time to time journey from state to state, upon request, and assist in the formation and perpetuation of state societies for the conservation of vision. His traveling expenses should be paid by those who summon him to the various localities. He should have a well equipped office, with one or two stenographers, and a library and files, containing everything that is printed on the subject of conservation of vision. This office should be recognized as a central bureau of assistance, advice, literature, laws, etc.,

where all questions concerning this subject can and will be intelligently and willingly answered. The work of such an office would be enormous and its influence widespread. But to do this considerable money would be absolutely necessary, and he would, therefore, recommend that this money should be forthcoming from some source, and that the good work be encouraged to go on. He would also advise the distribution in all schools of crisply and plainly written leaflets concerning the care of eyes, ears, noses and throats. These should be taken home, so that the parents could read them. They should be printed in various languages. Perhaps even a better plan would be to have suggestions of this kind printed on the blank fly-leaf of all school books. This would cost almost nothing extra, and the benefits to be derived would be incalculable.

THE SURGEON OF THE FUTURE.

Dr. John Bland-Sutton **(Western Canada Medical Journal)** concludes his address as follows: "In pre-Listerian days the path to surgery lay through the dissecting-room. A thorough practical knowledge of the anatomy of man was and is indispensable to a sound surgeon. Many surgeons whose names are prominent in the history of surgery—from John Hunter to Fergusson—taught anatomy by dissection. Surgeons no longer act as demonstrators of anatomy or conduct post-mortem examinations; the principle of antiseptic surgery forbid such occupations. The practical training in the dissecting-room and post-mortem room teaches men something they cannot learn from books—the appreciation of tissue; this means, in plain terms, the power to recognize organs and tissues, normal and abnormal, at sight or by touch in the course of an operation.

Surgeons are of two types, they are either craftsmen or biologists. The surgical craftsman invents variations in technique; metal plates, wires and screws for bones; or fancy methods of suturing wounds. Some expend their ingenuity on surgical cutlery and improve the knives and needles. The utility of a simple tool such as the clip forceps is inestimable. In spite of much ingenuity among surgeons, an ideal ligature material awaits discovery. Clever contrivances like the laryngoscope, bronchoscope, and cystoscope have revolutionized special branches of surgery. Another useful instrument, the oesophagoscope, requires for its successful use a surgeon with the instincts of the sword-swallower and the eye of a hawk. Recently through the kindness of my colleague, Alfred Johnson, I witnessed through the cystoscope a stone slowly extruded from the vesical orifice of the ureter.

The biological surgeon studies pathology in its broadest aspect and investigates, in the laboratory, problems of morbid anatomy and bacteriology. The diagnostic value of reports issued from the laboratory by the pathologist and the bacteriologist, to be of value, must be estimated with the help of clinical experience. If the surgeon has had no experience in bacteriological methods he must accept the reports from the laboratory with the hopefulness of a patient swallowing physic compounded from a prescription he does not understand and which he is often unable to read. The training of surgeons in clinical pathology is of great importance, and it requires little foresight to recognize that for men ambitious to attain high places in surgery the high road lies along the pathological institute.

Morbid histology has been and still is of great use in classification, diagnosis and prognosis of morbid growths; for a knowledge of their cause new methods are required. For these we fix our attention on the men along the sky-line—bacteriologists, experimental physiologists, physiological chemists, and physicists; the future lies before them. As it is of the utmost importance that surgeons shall have a practical knowledge of clinical pathology, it becomes essential to bring the wards, operating theatres, and laboratories into the closest intimacy. From this union of workers means will be found for curing diseased organs by chemiotherapy rather than by extirpating them. Until the right compound for curing cancer has been discovered, surgeons will continue to exercise cancerous viscera, and this makes it more necessary to discover means for ridding cancer of pyogenic bacteria.

The skill, ability and dexterity with which surgeons remove a kidney, the uterus, or perform extensive resection of the intestine, great and small, can be witnessed almost daily in the splendid hospitals of large cities, but surgical effort is handicapped by streptococci and the coli group, which are very resistant to chemiotherapy. There is something fascinating in submitting septic morbid growths to what Ehrlich picturesquely terms a "bacteriological siege." Our difficulty is to destroy these seeds of disease without serious damage to the organs and delicate tissues in which they flourish. The antiseptic solutions employed against bacteria are powerful cell poisons. We need therapeutic agents which destroy parasites but do not kill the tissues of the host. Acute minds are busy with these problems, and surgeons may hope to remove visceral cancer with no more risks than attend gastro-jejunostomy or hysterectomy for fibroids.

The magical effects of salvarsan on the lesions of syphilis, acute and chronic lead us to hope that this compound will assist in the elimination of cancer of the mouth and tongue, for in these situations cancer is often engrafted on chronic syphilitic lesions. It is reasonable to believe that within a few years surgeons will notice a marked decrease in the number of men with cancer of the lips, gum, tongue and pharynx, and of women with cancer of the vulva. The extinction of these forms of cancer will relieve surgeons of some of the most distressing and unsatisfactory operations they are called upon to perform.

In regard to the cure of malignant disease, there is most hope in chemiotherapy. In detecting the cause of cancer histology has proved a false dawn, but, like that peculiar light which precedes the dawn in the tropics, it is very fascinating. Who can tell how long we shall have to wait for the real dawn! We need not despair; the zeal, enthusiasm, and acumen of laboratory workers fills us with the hope that the ideal of all practitioners of medicine and surgery is attainable—the control of all forms of infective disease.

ADRENAL VIRILISM.

Dr. Tuffier **(Monthly Cyclopedia & Bulletin)** states that under the term adrenal virilism is to be included a group of disorders in somatic development characterized either by precocious virility in the child or by the assumption of a masculine appearance by a woman, even after the menopause, under the influence of a tumor or secretory disturbance of the adrenals. The author presents the following example of the second variety:

A woman of 62 years was admitted on Dec. 16, 1913, for abundant metrorrhagia. Full-blooded and sturdy she showed upon examination all the physical signs of a large fibroma; but surgical intervention was contraindicated by the 70 gm. of sugar found in the patient's urine. A striking feature of the case was an unusual hirsuties. After treatment for her glycosuria the patient was readmitted on Jan. 19, 1914, showing only 6 gm. of sugar in the urine and being in a favorable state for operation. At this time she was observed (not having shaved for some time) to have an extensive black beard and mustache. There was slight exophthalmos. There was baldness of the frontoparietal regions—a condition almost exclusively seen in men. The pitch of the voice and the conformation of the limbs, which showed a high degree of muscular development, as well as their relative length, were altogether of the masculine type. On the forearms and hands yellow spots almost confluent, were to be seen. The clitoris was found enlarged, measuring about 4 cm., and was covered by a well-developed prepuce.

Inquiry from the patient elicited the fact that these unusual physical features had developed since the menopause, and photographs taken before that period showed this to be true. Her habits were also changed; she was now occupied exclusively with manual tasks such as ploughing and hoeing, which caused her no fatigue. In the patient's previous history nothing unusual was found except that she was one of a pair of twins. She had never borne a child and presented no evidence of any previous organic affection. The thyroid gland was normal. The blood-pressure (Pachon instrument) was 200 mm. (systolic). The cerebrospinal fluid was normal and issued from the needle drop by drop. No signs of increased intracranial tension were present, and papillary stasis proved absent upon examination of the retina. Upon X-ray examination the sella turcica appeared normal. The pelvis was of the female type.

Upon operative intervention a condition perhaps the cause of the patient's peculiar bodily features was found. Celiotomy on Feb. 3, 1914, led to the discovery of a uterus of the size of a fetal head, formed by muscular bundles similar to those of pregnancy. A subtotal hysterectomy was done, followed by uninterrupted recovery and by complete cessation of the glycosuria within three months after the operation. Examination of the region of the adrenals during the celiotomy revealed there a bilateral mass equal to the half of a kidney in size, situated over the adrenal bodies, and of a fibrolipomatous consistency.

Study of the tissues removed at the operation showed the left ovary atrophied, the right ovary, however exhibiting a tumor of the size of a large walnut. The uterus was as large as though four months pregnant. Split in the median line, it showed no fibroma or tissue sclerosis, but muscular bundles of the size met with in pregnancy; the mucous membrane was unaltered. This combination of a simple hypertrophy of the uterus with metrorrhagia in a woman of 62 was already suggestive. The ovarian tumor was found soft, hemorrhagic, and devoid of vegetations or cysts, and presented an appearance not previously met with by the author. After protracted discussion, and after having for a time believed that the tissue represented an aberrant adrenal body, it was finally decided to constitute a neoplasm originating in the ovary itself from the lutein cells.

The aggregate of this and similar cases represents a clinical type, already known to the ancients, designated as hirsutism by Appert and as adrenal virilism by Gilbert Ballet and Gallais. Met with chiefly in female children, its signs are remarkably uniform. Hypertrichosis of masculine type is the most constant sign, having been recorded in 30 out of 32 cases; muscular hypersthenia is also the rule, even in adults. Hypertrophy of the external organs of generation has been found in 40.62 per cent of instances.

This excessive functioning of the adrenals is differently manifested according to the age of the patients. In children it greatly accelerates growth, as in a case of Dun, where a child 5 years old appeared to be 14, with hypertrichosis, more especially on the back and in the genital region. In Walker's case a girl of 7 had the stature of a man of 20 and showed hairy development resembling that of an adult male. In a case of Herbert a child only 18 months old began to show hypertrichosis. Results are far different in adults, and especially after the menopause, when the associated metabolic changes can influence only certain organs, and produce merely hypertrichosis, hypersthenia, and hypertrophy of the reproductive organs.

Between the extreme case above reported and the normal condition there must exist a transition series of cases of biologic deviation due to adrenal changes. Recognition of these should be practicable in clinical medicine. The manifestations of virilism should draw attention, in a given case to the possible presence of an adrenal tumor which, thus early detected, may be successfully dealt with.

RENAL DAMAGE FROM CALCULI.

In a paper by Dr. Henry D. Furniss, read before the American Association of Obstetricians and Gynecologists the author reports from an experience of about four cases, he has come to the following conclusions: 1. Lithiasis was essentially a chronic disease. Undoubtedly the calculus in each case was present much longer than the symptoms yet the average duration of symptoms was four years; the minimum being one month and the longest eighteen years. The development was often insidious ,and frequently complete destruction of a kidney occurred with very little discomfort or interference with the general health. In only two cases, with a septic temperature, was the general health much im-

paired. 2. Multiplicity of stones was found in fifteen cases, though in only two were both sides affected. In calculous anuria this bilateral involvement should always be considered. The consensus was that sympathetic anuria was rare, and that in nearly every case it would be found that the unsuspected kidney had either been congenitally absent or previously destroyed by disease. Reflex pain was another condition to be looked upon with suspicion; a definite cause for pain was generally to be found, and he regarded this so called reflex pain as very rare. 3. Stones, unless multiple or very large, situated in the calices, in the absence of infection, or the opening of a bloodvessel by attrition, caused little discomfort and **little damage.** The size and location in these quiescent cases should be determined by frequent radiographs, and when the stone remained favorably situated and did not enlarge, a waiting policy should be the one used. When very large, pressure atrophy of the renal parenchyma occurred. 4. When a stone entered the pelvis of the kidney, then obstruction was likely to occur, and with the consequent retention infection would sooner or later develop. The rougher the stone and the greater the retention, the greater the liability of infection, so the more urgent need of operation. Calculi able to be passed through the ureter, entered it soon after they had dropped into the pelvis from one of the calices; so they seldom saw pelvic stones that were subsequently passed. Stones in the pelvis that obstructed had many features in common with ureteral calculi. 5. Ureteral calculi that were small and smooth did not completely obstruct, moved downward constantly, and were passed in a relatively short time, did only temporary damage. Those that were fixed, or obstructed seriously the outflow of urine, soon led to irreparable damage, especially if infection took place. Stones in the pelvis that ball-valved it and ureteral calculi caused much more suffering and greater renal damage, than stones in the calices, especially when infection supervened upon the retention. Ureteral calculi often became imbedded in the ureteral wall, and after operation, stricture of the ureter was very apt to occur, and caused further damage to the kidney. 6. The effect of calculi upon the kidney was dependent mostly upon the obstruction that was produced, and was added to by infection, which was present in sixty-eight per cent of his cases. There were nine cases of pyelitis and pyelonephrosis, five of pyonephrosis, and five of infected hydronephrosis. In seventeen cases the function of the involved kidney, compared with its fellow, was determined, and in only two was it normal, in four the loss of function was moderate, in three great, and in eight complete. This analysis showed that in practically fifty per cent there was damage to the renal function, and that in thirty-five per cent it was completely destroyed. These numbers fell short of showing the real condition for in fifteen cases, nearly fifty per cent of the total, no determination of function was made. 7. Of the thirty-two cases, the calculi produced no injury in thirteen, in nine there was pyelitis and pyelonephritis, in five pyonephrosis, and in five infected hydronephrosis and it was fair to assume that some of the nine pyelitic and pyelonephritic cases would have in the course of time advanced to the stage of pyonephrosis and infected hydronephrosis; and of the thirteen undamaged cases, many would later have become more seriously involved. 8. In the pyonephrosis cases and the infected hydronephrosis with great loss of function, nephrectomy was advisable. 9. In the ureteral cases with great loss of function, it was debatable whether the removal of the stone or the kidney was advisable. Better results were obtained by removing the kidney than the stone, and the best results came from removing the kidney and ureter to a point below the stone.

As infection was one of the greatest dangers, their examination should be conducted with this in mind. The method upon which he insisted was radiography, first and always. The estimation of the damage done by the kidney was best determined through a cystoscope, noting the elimination of indigocarmin injected intravenously. Seldom was there any need for the use of the ureteral catheter. Occasionally, but not often, it was necessary to insert an x-ray catheter to be certain that a given shadow was in the ureter, or to pass a waxed tip catheter when radiography failed us.

HEREDITARY SYPHILIS AN IMPOSSIBILITY.

The **Post-Graduate** discusses this question as follows:

Somebody may say that we strive to differentiate too carefully between **tweedledee** and **tweedledum.** Even so: medicine should not hide her face before science in any of its mutifarious aspects, and the fact in medicine justly may be dignified with the same, fine consideration, as that meted to her sister branches of science. So frequently we deal not wisely nor at all well with definitions. Our lack of their appreciation is considered by our peers the **bete noir** of our education—or lack of it.

It may be true as the philosopher has said that we should not concern ourselves so much with the arbitrary meaning of the word, as with the investigation of the behavior of the thing, yet civilized men know, and scientists perhaps, best of all, the compelling necessity of strict and definite terms, which, in the last analysis, will be but arbitrary designations for the transference of ideation from brain to brain.

It was not so very long ago when it was generally conceded, perhaps, that one inherited among many other diseases syphilis, tuberculosis, and rheumatism, for example, as he inherited, on the one hand, family facial conformities; on the other, property. Nothing is more absolutely and entirely at variance than this with the real, scientific conception and acceptation of the meaning of heredity. Nor is it our justification that the adaptation of the meaning of the world in other fields has operated to transform our interpretation evidenced in its present, and very unfortunate, adaptation in the medical literature of the day. The child inherits from his parents a correlation between the variants of his characteristics, nothing more: obviously, then, a direct observation of the mechanism of such a thing is impossible; and the construction, there-

fore, of the theory of heredity from a vast number of facts, a prime requisite for the proper interpretation—the indirect observation, as it were, of any presenting problem.

To present an analysis of the many and interesting conceits leading to the present day scientific idea of the requirements of a theory of heredity would be to trangress to an impossible degree the reasonable limits of such an article as this. However, it may be not uninteresting here to note that the underlying belief of the contender for the acceptance of the so-called "acquired characteristics" of heredity, postulates that which harkens back to the very cradle of the philosophy of heredity—the "Animism" of Van Helmont, with its transfer of not only sexual products, but other potent materials, in this reference, through the mother's milk, or **the nurse's milk.** Such a theory is a part of the realm of mysticism and has strangely far strayed into the belief of the practical man of medicine of today. There is every reason to believe that the fundamental basis of heredity not only is inextricably bound up within the cytoplasm of the cell, but within an especial part of the cell, the nucleus, and more especially in the chromatin granules of the nucleus. Otherwise the characteristics of these essential parts may be the same, generally considered as any other protoplasmic elements. In the elemental germ cell, or, if not either of them, then in the new cell formed by their fusion must reside the potential of all the variability of every cell in its homologous series; or any organ, and all organs, composed of these cells.

Evidence is absolutely lacking, moreover, that germ cells or sperm cells, hence the products of their fusion, are affected at all by any influence exerted on the body cells of the adult organism. However, although the proof of this statement were sufficient in itself for our argument, yet in this respect it is negligible.

So superficial a review of the subject must at least make one fact clear and convincing, namely, that the inheritance of an accidental, fortuitous condition, such as infectious disease, may not be. We may have conceptional syphilis, or tuberculosis or typhoid or small pox, but the transmission of one or any of these along lines of heredity is inconceivable. From the viewpoint of heredity, then, syphilis passes into innocuous desuetude; one cannot inherit a spirochete pallidum.

ANAL AND RECTAL GROWTHS OF BENIGN OR DOUBTFUL CHARACTER.

Dr. T. Chittenden states that in a series of 3,000 rectal cases previously reported there were forty-nine benign and seventy-six malignant growths of the rectum. The large majority of these tumors were characteristic and the differential diagnosis was easily made. A few malignant growths seen in an early stage, and some unusual benign types associated with ulceration, were of such a nature that the exact diagnosis was not easily determined.

The writer emphasized the fact that the operative measures to be employed differ radically in each of these conditions. An excision of the rectum is necessary for the malignant cases, a simple local excision is all that is required for the benign growths, where an incision and drainage will suffice for the abscesses and fistulæ. Therefore, a doubtful case cannot be treated as a breast case in which a complete amputation for a benign growth may be justified. In the case of the rectum there is not alone mutilation but a high mortality and a serious impairment of function as well to be considered. Furthermore, the removal of a specimen of a suspected tumor is not now approved and this complicates the problem still more.

The histories of several cases which illustrate the doubtful nature of some border line conditions occasionally found in the rectum are cited. They tend to show that aside from benign growths some of which have many of the characteristics of malignancy, there are certain abscesses which develop in the loose cellular tissue of the retro-rectal and pelvi-rectal spaces which are even more suspicious. These indurated, irregular swellings bulging into the rectal ampullæ at first resemble very closely the sensation imparted to the finger in malignancy. A little later they become soft and fluctuation is perceptible when all doubt as to their nature is removed. The sinus from old fistulæ occupying these same spaces is apt to be much more perplexing than an abscess. As the slow process goes on the rectal wall is crowded into the lumen of the bowel and assumes an irregular, indurated outline which is very suggestive of cancer. Other conditions of similar doubtful character such as gummatous growths and tubercular ulceration are also discussed.

THE PATHOLOGIC SIGMOID COLON AND ITS SURGERY.

Dr. L. J. Hirshman concludes that studies with the fluoroscope and the sigmoidoscope have shown that true prolapse and invagination of the sigmoid colon into the rectum is not an uncommon condition. The author advocates shortening the mesentery of the sigmoid by attaching the mesentery of the invaginated or prolapsed portion to the root of the mesentery of the descending colon.

In a number of cases of obstruction to normal defecation, this obstruction will be found in women who give a history of a disturbed puerperium. Radiographic studies of these patients who give a history of chronic obstipation accompanied by pain and marked tenderness in the left lower abdominal quadrant and the region of the womb and broad ligaments, more often the left, show the presence of adhesions which angulate, displace or bind down the sigmoid. The cure of this condition involves the relieving of the adhesions and the covering of raw areas with omental, epiploic or mesenteric grafts, or the excision or short-circuiting of the sigmoid. Another class of adhesions of the sigmoid seriously obstructing defecation is caused by adhesions to the abdominal wound following laparotomy.

Hypertrophy or redundancy of the sigmoid colon is another pathological condition which has

not infrequently been met with. When the walls of the bowel contain a large proportion of unyielding fibrous tissue, short-circuiting is insufficient and excision is insufficient and excision is indicated.

In malignant growths of the sigmoid colon, excision with immediate anastomosis is the ideal indication.

When inoperable it is the author's practice to always make the colostomy in the median line. This is done for the following reasons: First, the median incision is the best for exploratory purposes. Second, one has the choice of any part of the colon in the making of the colostomy. Third, one gets just as good adhesion and union, with no more liability to hernia, as in the side. Fourth, the patient is better able to cleanse and dress the colostomy in the median line. Fifth, it takes the colostomy opening away from the neighborhood of the iliac crests, and allows of the better fitting of retention apparatus and colostomy shields. Sixth, control of a median colostomy is just as satisfactory as the lateral.

The author has found no difficulty in securing colostomy control by using a small rubber catheter in the mesenteric opening beneath the spur and encircling the upper limb of the colostomy with this catheter, drawing it just snug enough that the mucous surfaces appose. The catheter is held in this position by a seraphine snap and is released by the patient when he wishes to defecate or expel flatus.

FEES FROM THE PUBLIC STANDPOINT.

While the American College of Surgeons and others, says **Medical Standard**, are making so much ado about the division of the surgical fee, and other specialty fees, as between the physician and the specialist, it might be a good idea to give a little attention and possibly revision, to the matter of the fee from the point of view of the public. There can be no doubt that the laity does feel dissatisfaction with the specialist's method of charging; and it is a subject upon which the layman is naturally rather touchy.

It is not altogether that he charges too much—that objection applies only in individual cases—but chiefly because of the uncertainty and irregularity of his charges. The layman complains that there does not seem to be any definite or intelligible basis, at least intelligible to him, for the determination of the fee that is to be charged him for this or that piece of work. He finds himself asked various sums of money by different specialists for the same service; and when he inquires the reason, it is carefully explained to him that a specialist's fee is gauged by the latter's professional skill and prestige, in other words, by the market value, or what the specialist can command for his work in open competition.

No sooner has the layman digested and assimilated this viewpoint, and brought himself to assent to it, than he is faced with the rather disconcerting discovery that one of his neighbors has been charged an entirely different fee by the same specialist for identically the same service; and upon further inquiring the reason for this, he is told that the fee is estimated with reference to the ability of the patient to pay. Only recently, a friend of the writer complained to him that, upon visiting with his family physician, a certain well-known surgeon, for the purpose of arranging for an operation upon one of his family, the surgeon refused point-blank to name his fee until he could have a confidential talk with the family physician—"which, of course," sneered the writer's friend "was for the purpose of learning from my doctor all about my financial condition, and how much it would be safe to soak me for." And then he added, "But what could I do? I know nothing about what an operation is worth, and have no data to form a judgment upon, nor even any idea of what actuated the surgeon in fixing his fee."

It is perfectly right and proper, of course, that a specialist or surgeon should set his price according to his professional standing. And it may be equally right and proper to gauge the fee by the earning capacity of the patient. But it is hard for the layman to satisfy himself that both are consistent. It would seem that one or other ought to prevail. However, even that is not the point. The crucial consideration is that there should be some definite and uniform understanding about the matter, so that a patient contemplating the service of a specialist or surgeon might have some means of approximately, at least, figuring the cost without the embarrassment of going from specialist to specialist and dickering about price. And there should be, without question, a little more frankness between specialist and public in the matter of fees and their basis.

One intelligent layman suggests, for instance, that there should be a class of operations and other expert services which, by virtue of long custom and practice, have become economic constants, with a fixed value in dollars and cents. The price for such work should no longer rest upon the standing of the men who perform them. If their money value is such as to render them unprofitable to the high-grade men, then the high-grade men should frankly say so and leave them to those who are able to perform them for the proper fee. If the high-grade men undertake them, then they should not expect any more for them than the market price.

In this matter the remedy is largely in the hands of the general practitioner. He is the one who suffers most from the situation, in pocket and in prestige, and it is he who must apply the remedy. For one thing, he can assume his rightful position, which he formerly held, as daysman between the patient and the specialist, and in that capacity can adjust the financial relations between the two, compelling frankness and respect on both sides. In the second place, the general practitioner can shake off the bugbear of ultra-specialism, which rides his neck like an old man of the sea, and himself undertake many of the tasks for which he now refers the patient to the specialist. He is, or ought to be, perfectly capable of performing many of the so-called "special" services, and would have no difficulty at all in convincing his patients that they are worth more than the ordinary every-day practice.

Thus the general practitioner would legitimately share in the financial rewards of medical

progress; the specialist would still be left the genuinely expert work that properly belongs to him; and the profession would be relieved of the unpleasant stigma of exorbitancy and irrationality in his charges. All of which, it seems to us, is of far greater importance than the question of dividing surgical fees.

GENERAL PRACTITIONERS AND MODERN TECHNIQUE.

One of the healthiest and most promising sign of the times in medical practice, at least in this country, according to an editorial in the **Medical Brief,** is the nearness with which the general practitioner, even in the remotest corners of the rural districts, walks to the vanguard of the profession.

The splendid facilities for the spread of knowledge, and the energetic use that is made of those facilities, conspire to put the cross-roads doctor in possession of the fruits of scientific research and mechanical ingenuity, to practically the same extent, and almost as quickly, as they become the possession of the specialist in the highly organized centers. And not only so, but the spirit of the profession is such that the cross-roads man is alert to avail himself of his advantages, and quick to respond to every advance movement. For this satisfactory state of affairs, of course, the credit is in no small measure due to the medical press of this and other countries.

However, when every recognition has been accorded the alertness of the country practitioner and the well-administered distribution of medical knowledge, it must still be admitted that, as a rule, the provincial physician knows more with his head than he practices with his hands. By this we mean that his acquaintance with, and his appreciation of, the value of certain diagnostic and therapeutic measures are considerably in advance of his familiarity with the practical technique of those measures.

Many a practicing physician in small towns and rural districts, for example, knows in a theoretical way all about the Wassermann reaction, the modern features of stomach examination, and other diagnostic procedures which have come into vogue since the time of his graduation; and has a similarly theoretical knowledge of equally modern therapeutic measures, such as the various modalities of electrical treatment and the more recent biologics; but he is not making use of them because he has not been able to familiarize himself with the necessary technique of their application.

It is gratifying to note that a little more attention is nowadays being paid to this phase of the matter in the various text-books of diagnostic and therapeutic subjects, and one firm of medical book publishers has recently put out a book devoted entirely to diagnostic and therapeutic technique, including that of every important measure used in medical practice up to the time of printing. But even this is not adequate to meet the situation, since there are many procedures which can not be included in a text-book of limited size, and every day, almost, brings forth an innovation, or at least a modification, in technique. What is needed is that the medical journals, which are, after all, the great educators in current medicine, shall give this practical, technical phase of the subject more extensive and detailed treatment. We are too ready to assume a knowledge of technique in matters which can not possibly have come to the ken of the men in the field. The readiness with which they respond to progress entitles them to the utmost consideration in this respect.

THE USE OF PARALDEHYDE AND ETHER INTRAVENOUSLY AS A GENERAL ANESTHETIC.

George W. Cale, St. Louis, in the **Journal of the Kansas Medical Society** writing on this subject says:

Paraldehype is one of the best hypnotics we possess; a colorless, volatile liquid with a characteristic unpleasant taste and smell, specific gravity .998, soluble in ten volumes of water at 15° Cent., soluble in hot water and boils at 124° Cent., it mixes in all proportions with alcohol and ether. Its disagreeable smell and taste make it an undesirable drug to be administered by the mouth; intravenously, the hypnosis is prompt and effective. Shortly after the infusion is begun, the patient will appear to gradually fall into a normal sleep, without any stage of excitement or other disagreeable symptoms; the respiration deepens and the pulse becomes slower and fuller; the color of the skin is unchanged. Almost immediately after the infusion is given, the patient will taste the paraldehyde and within one minute the odor can be detected on his breath. Noel and Soutter found paraldehyde intravenously to act momentarily as a depressant, but this was transient and easily overcome by combining it with an equal amount of ether. They first used a mixture of five to fifteen c. c. of paraldehyde with an equal amount of ether and dissolved this in 150 c. c. of a cold one-per cent solution of sodium chloride in distilled water. Plain sterile water, however, will answer as well as the salt solution. The mixture should be made by first thoroughly shaking the paraldehyde and ether in a tightly corked receptacle and afterwards adding this to the cold salt solution or sterile water and again thoroughly agitating in a large, tightly corked bottle. The solution should be perfectly clear after shaking. Unless the water is cold the ingredients will not mix and in a short time the paraldehyde and ether will be seen floating on top of the water. At first we experienced some difficulty in gaining a clear and perfect mixture, but in a personal communication from Mr. Soutter he calls attention to the necessity of the mixture being made with very cold water. After properly mixing the ingredients and allowing them to stand in a tightly corked bottle, the mixture may be warmed to 40° Cent. without causing the ingredients to separate. While at first from 5 to 15 c. c. of paraldehyde and ether in 150 c. c. of water were used, the originators of this method now recommend 10 c. c. of paraldehyde and 5 c. c. of ether in the same quantity of water. They also say that the addition of an equal quantity of alcohol makes is easier to obtain a clear solution.

They report their patients anaesthetized and ready for operation in sixty seconds after beginning the infusion. They have found it particularly desirable in cases of alcoholics, who are known to be bad subjects for the administration of anaesthetics by inhalation.

Paraldehyde is excreted rapidly by the lungs and the moment the infusion ceases the effect of the drug begins to pass off, consequently it is practically impossible to administer an overdose. In debilitated cases where a general anaesthesia would be contra-indicated, the method is particularly advantageous because such patients not only become anaesthetized by a very small quantity of the drug, but at the same time receive the benefit of the infusion of normal salt solution which tends to better their general condition.

While we do not think this method will ever be considered or recommended as a substitute for other methods of anaesthesia, we believe it advantageous in the following classes of cases:

First—In chronic alcoholics, who are usually bad subjects for inhalation anaesthetics.

Second—In cases of arterio-sclerosis and in other cases where the blood pressure is unusually high.

Third—In cases of organic heart, kidney or lung diseases.

Fourth—In debilitated cases.

Fifth—In cases suffering from shock.

Sixth—In cases of operation about the head, face and neck.

INDUCED PNEUMOTHORAX.

E. von Adelung, Oakland, Cal. (Journal A. M. A.), reviews the history of artificial pneumothorax, described by Forlanini and Murphy, and describes the apparatus and technic. The manometer is the guide to the work. He gives his own experience. The benefits of the operation are not always apparent at first, and symptoms may become temporarily aggravated; but after a few weeks the good results appear, as physiologic rest has been obtained. Pain from the operation is sometimes unavoidable on account of the tension of lesions and the displacement of organs, but it is rarely of long duration and it is best minimized by gradual increase of pressure. Subcutaneous emphysema results from too much positive pressure. The spring pad hernia truss is often useful in alleviating it. Bleeding from the opposite lung is rare. Puncture of the lung is to be avoided, though it commonly causes little or no trouble. The most important accidents are pleural reflex and gas embolism, but only few deaths have been recorded. The distinction between the two is not clear, and some authors consider them to be identical. Clinically pleural reflex and gas embolism yield the same syndrome; fainting, pallor, convulsions, perhaps temporary or permanent paralysis and occasionally death. The Bauer incision seems to be, to some extent, a safeguard, and Saugman and some others aspirate before turning on the gas to see whether or not the needle is in a blood-vessel. Von Adelung says: "My conviction is that air embolism and real pleural reflex, such as results experimentally from the injection of irritating fluids into the sac, are both to be avoided by using warm, moist nitrogen, careful local anesthesia of the pleura and proper observation of the manometer. Not until the latter records free oscillations with persistent negative mean pressure can one feel sure that gas may be introduced safely, unless one is using the open method." There is much difference as regards cases appropriate for induced pneumothorax. Hemoptysis is controlled by the method and high temperature is not a contra-indication. Natural pleural effusion acts the same way, but a small one may be aided by adding gas, thus inducing more complete lung rest. All writers agree that laryngeal tuberculosis is not a bar to the treatment. Pleuritic adhesions, if extensive, are a serious mechanical hindrance to the method. If slight, they may be broken down by gas pressure, if carefully applied, and perhaps sufficient free pleura may permit its use. If the patient is already dyspneic, unless it be due to a toxin, pneumothorax is irrational. Miliary tuberculosis is regarded as a contra-indication, and so are serious cardiac disorders and marked splanchnoptosis. The main discussion is on how early artificial pneumothorax should be performed. Most writers advise it only in moderately advanced unilateral cases, but von Adelung thinks that careful study of the individual case should be advised. He follows Murphy in advising it in cases in which there is no absolute contra-indication, and says that when it does not cure it often alleviates. He says: "My experience is limited to forty-two cases, all but one bilateral and well advanced. All but one were ambulant, the patients coming to the office for treatments. Of the forty-two cases it is noteworthy that pleuritic adhesions prohibited pneumothorax in only five. The total number of punctures done was over 614, and no gas embolism occurred; but pleuritic effusion supervened in six cases, one being purulent. Twenty-two patients gained weight and eleven lost weight, this observation being unrecorded in four cases. In thirty-seven cases in which a pneumothorax, even though small, was possible, twenty-eight patients were improved in varying degrees, one case was arrested (perhaps cured) and ten remained unimproved."

TREATMENT OF FRACTURES OF THE LOWER JAW.

Dr. Robert H. Ivy (Therapeutic Gazette) discusses this question as follows:

The method of treatment selected for any given case of fracture of the lower jaw depends upon several conditions:

1. The facilities that are at hand.
2. The position of the fracture and tendency of redisplacement of fragments after reduction.
3. The particular requirements of the individual case.

In emergencies, and where the services of a dentist to make suitable splints are not available, the surgeons must resort to bandaging, wiring the teeth, etc.

Cases in which the occlusion of the lower with the upper teeth is good, and there is no displacement, or no tendency to redisplacement of fragments after reduction, often do well with the

mere application of a Barton bandage or one of its modifications. But if the teeth occlude poorly, and the displacement cannot be controlled, the bandage will not give a good result, for the slightest deviation from the original line of the bone will cause marked functional and cosmetic derangement from malocclusion of the teeth. Fixing the fragments by wiring the lower teeth to the upper has no advantage, where it can be employed successfully, viz., in cases in which the teeth are good and there is little or no displacemeant, over the bandage alone. Where the conditions force treatment by bandage, I have found it of advantage to follow the turns of the Barton bandage with a plaster-of-Paris bandage. When the plaster sets, the dressing can be cut in several places and removed for suitable padding, etc. This dressing can then be reapplied and fastened with adhesive strips, and makes a fairly firm dressing.

In any case of complete fracture of the lower jaw, however, and particularly if there is displacement, I cannot too strongly urge the cooperation of a dentist in the case to make a suitable interdental splint. Of these there are several kinds; the commonest in use is made of vulcanized rubber, covering both upper and lower teeth, and fixing the jaws with the mouth open. It is cumbersome, difficult to keep clean, and in some cases, particularly fractures at the angle behind the teeth, does not do what is needed—i.e., fix the fragments with the teeth in proper occlusion. This splint has been relegated to the museum in the Dental School of the University of Pennsylvania. The splints that are employed in this school are two in number, which meet the requirements of the great majority of cases, and every student is obliged to make one before graduation.

The first type of spint is useful in cases in which the occlusion is good, and where there are three or four sound teeth on each side of the line of fracture. I need not go into the details of making this splint. It is composed of German silver or gold, swaged on a metal cast or reproduction of the teeth which every dentist knows how to make, and is simply a series of caps covering several teeth on either side of the break. The splint can be cemented on the teeth and has the advantage that the mouth can then be opened and closed for mastication, cleansing, etc.

The second form of splint is known as the mandibula-maxillary splint, and is also made of German silver; it is exactly like that just described, except that it covers the upper teeth as well as the lower. It is to be used in cases of fracture where the teeth are few in number, where there is much displacement, and where the fracture is far back behind the teeth in the region of the angle. This splint covers both upper and lower teeth, fixing the jaws in the closed position, the teeth being in correct occlusion. It is important that the jaws be held closed rather than open in fractures behind the teeth at the angle. If the teeth are held apart in such a fracture, as is done when the old vulcanite splint is used, a V-shaped space will form at the seat of fracture, often giving a malocclusion when union occurs. We make no attempt to fix the posterior fragment with the splint, in these cases of fracture at the angle. The posterior fragment will take care of itself and come down into more or less good position when the muscles relax. In any case, it is the proper occlusion of the teeth that we are aiming to preserve, and is the important thing. It is not necessary to extract teeth to feed patients wearing interdental splints. There is always sufficient space behind the last molar teeth for liquid food to pass.

Before applying splints, and in all cases of fracture of the jaws, infection should be guarded against as much as possible by thorough mechanical cleansing of the mouth, and employment of a mouth-wash throughout the course of treatment. A 1:3000 solution of potassium permanganate makes a good deodorant mouth-wash.

In regard to wiring or plating the fragments in cases of fracture of the jaw, as a rule these attempts at fixation are not successful owing to the unavoidable element of infection in this region. Such treatment is entirely contrary to the principles laid down by Mr. Lane for the operative treatment of fractures. Wiring the bone may have to be restored to in some cases where teeth are absent. In these cases some success may be attained by this method, as infection is less liable to occur in the absence of teeth, and less accuracy of alignment is necessary than where teeth are present.

SOME POINTS IN THE TECHNIQUE OF PROSTATIC ADENOMECTOMY FOR ADENOMATOSIS OF THE PROSTATE.

Dr. William M. Spitzer (American Journal of Urology) writes as follows:

Many a one who operates for the above condition without having had considerable previous experience, is under the impression that he must "enucleate" the prostate gland, and as a result, he often removes much more than is necessary.

Of all the old men who come to us with obstruction of the urinary outflow, a large proportion are found to have adenomata in the prostate. Even in those where carcinoma is found, the malignant tumor may have been the outgrowth of an adenoma.

It is practically impossible to remove the prostate gland, because the recto-vesical fascia is so closely interwoven with the lower end of the bladder, the prostate gland, the anterior wall of the rectum and the seminal vesicles, that it cannot be torn away from any of these organs without dissecting the prostate itself. Moreover, this fascia, or one of its layers, extends into the gland proper, accompanying the ejaculatory ducts, and dividing the prostate into two portions, the posterior one having no connection whatsoever with the anterior. The function of the former, if it have any, is not known, and as far as the operative work is concerned is of no importance. The anterior portion has running through it the urethra, below and to the sides of which lie the glands which give the name to this organ. Anterior to the urethra only muscular and fibrous tissue are found, and if a gland be seated here it is due to congenital misplacement.

The prostate has no capsule and no lobes, unless one chooses to call the anterior portion and the posterior portion, respectively, the anterior and the posterior lobes. Superior and inferior may be substituted for anterior and posterior with perfect propriety because the important portion or lobe of the organ lies both

superiorly and anteriorly to the posterior when in the upright postion.

The superior of the three layers of the recto-vesical fascia runs in front of the prostate, to which, as previously mentioned, it is firmly attached, and then continues forward and upward on each side of the pubes, forming the pubo-prostatic or pubo-vesical ligaments. The middle layer of the recto-vesical fascia, together with the inferior layer, covers the seminal vesicles posteriorly or inferiorly, and a projection of it accompanies the ejaculatory ducts to within a few millimeters of their entrance into the urethra, making a perfect fascial plate completely separating the anterior portion of the prostate from the posterior. This fascia is also inseparable from the organ. The inferior layer of the recto-vesical fascia blended with the middle layer, and known as the "fascia of Denonvilliers," lies between the extreme inferior wall of the prostate and the rectum, and is also so attached to both of these organs that if an attempt were made to tear away either one or the other, a portion of the organ to be left would undoubtedly come away. All three of these layers comprise the anatomic capsule of the prostate, if capsule it be called, completely enclosing the organ. It is also not to be forgotten that the fibra-muscular structure of the prostate insensibly penetrates the deep layer of the triangular ligament, and intertwines with the fibers of the transversus perinci profundus, as it does with those muscular fibers of the bladder known as the internal sphincter. From the above it is clearly evident that it is absolutely impossible to remove the entire organ without seriously injuring the adnexa.

The object of the various operations which we employ to restore the impaired urinary outflow is to remove the obstruction. This is effected by restoring the internal opening of the urethra to the lowest point of the bladder which necessarily diminishes its length and brings the curve of the urethra back to its original status. This is very nicely accomplished by removing the adenomata which are located in that portion of the prostate lying between the urethra and the fascial plate. As there is no gland tissue anywhere else but at this site, there can be no other adenomata. With the removal of the tumors the operation is completed.

Dr. Wishard makes an incision on each side of the urethra and then proceeds to enucleate all the adenomata with which his finger comes in contact, after which he explores the bladder and finishes the operation by establishing good drainage and packing around it. He does this by way of the perineum, which it is true has certain advantages; but at the same time it also has its disadvantages. While his mortality is lower than that of those who operate by the suprapubic route, it is not free from the unfortunate accidents which occasionally occur when entry is gained through the perineum, suh as incontinence of urine, perineal fistula overlooking a stone in the bladder, or failure to cure the condition for which operation was performed. There is another accident which happens not infrequently, that a small adenoma which has been dug out slips into the bladder and becomes a nucleus for a stone. I therefore prefer to follow the supra-pubic route, as the operative results are perfect from every standpoint, the wound completely closes sooner or latter as the case may be, and there are no sequela to bother the surgeon or the patient. In other words, only one of two conditions follow; either complete cure or death. While the mortality is higher than in operation by way of the perineum, I think we are justified in following the supra-pubic route rather than have the incomplete results that are so often a source of torture to the patient.

As to the technique of the operation after the bladder has been opened and the field inspected, an incision is made in the mucous membrane of the urethra on each side, one inch in length, with a small knife, or with the instrument that I beg leave to demonstrate. It is a pair of dressing forceps having a small knife on the outer side of the end of each blade. It is inserted into the urethra, opened, and then withdrawn, slight pressure being made to hold it open during the withdrawal. The blade is just large enough to make an incision of such a depth that the lines of cleavage are easily found. The finger is then inserted and passed through one of the incisions in the mucous membrane, the line of cleavage found, and the tumor enucleated, the finger again inserted into the same opening, and if another tumor be detected it is likewise removed, this operation being repeated until no more tumors are to be found on that side. The same operation is repeated on the other side. It is important to hug the tumors closely, so that no other tissue be removed and as little damage as possible be done to the true prostatic structure. The best results and the least bleeding are obtained in those cases in which each tumor is removed separately. This work, which is identical with the method of Wishard, excepting the change of route, should be done preferably with the gloved hand, the badder walls being meanwhile carefully retracted. I am convinced that the shock is less in those cases where least trauma to the bladder wall occurs. Where the vesical walls are not well retracted the mucous membrane is injured very much by the constant passing in and pulling out of the ungloved hand and sharp finger nails. In those cases in which the prostate can be pushed up into the abdominal wound, there is less injury to the bladder wall, and consequently less absorption from infected bladder contents through a raw mucous membrane. The reason for making the incision in the lateral walls of the urethra is that they do not bleed as freely as the floor or the trigone of the bladder for the venous plexuses are not in the vicinity of these incisions nor is the field of enucleation near these plexuses. While there is a rather sharp hemorrhage during the enucleation, it ceases immediately when the prostate is dropped back, and before the bladder wall is closed it will be seen that it has practically stopped. Another advantage of the lateral incision over that of the trigone, is that one is nearer the field of operation by the former route.

The entire operation is confined to that portion of the prostate which lies between the beforementioned prolongation of the fascia of Denonvilliers posteriorly and the urethra anteriorly. The urethra itself is not torn away or injured except when an adenoma cannot be separated from one of the small ducts which empty into

the prostatic urethra. This may be avoided by snipping the duct with scissors when the tumor is enucleated.

Much has been said of the advantages of spinal anesthesia for prostatic adenomectomy, which it would be superfluous to detail in this paper, although I am in hearty accord with the opinion that it is the ideal anesthetic for this operation, particularly because of the relaxation of the abdominal muscles, and more especially of the levator ani, so that with a proper retraction of the wound and two fingers in the rectum one may in practically every case elevate the prostate into the abdominal wound and see the field clearly. This is of aid in avoiding shock, by eliminating injury to the bladder wall.

When is the operation completed? When there is no longer a projection of the prostate into the bladder; when the internal sphincter is at the lowest point of the viscus; when the finger no longer meet resistant rounded masses of tissue on being introduced into the urethra; and when a Van Buren sound whose curve is the arc of a very large circle can be introduced with ease into the bladder, not more than six and one-half to seven inches of sound being necessary to traverse the distance between the external urinary meatus and the bladder. This sound should be of large size.

Drainage can be as perfect through a suprapubic wound as through the perineum or the urethra if the bladder be closed very tightly about the drainage tube with a purse string, and if the abdominal wall be just as tightly closed around this soft rubber tube. The latter should not extend more than one or two centimeters inside the bladder wall, and should be tested by running water in and out of it before the patient is dressed. There should be no leakage around it. On putting the patient to bed syphonage can at once be established by attaching a soft rubber tube, previously filled with water, on one end to the tube left in the abdominal wound, the other end being inserted in a jar on the floor containing a measured quantity of antiseptic fluid. Syphonage will immediately be started and continue for the ensuing four or five days. The dressings on the abdoman by this procedure will be just as dry and clean as after a laparotomy.

I have been fortunate in obtaining post mortem examinations in most of my cases which terminated fatally, and have been able to demonstrate that the urethra was uninjured, that the prostate was left in situ, the ejaculatory ducts were intact, and the cavities remaining after enucleation of large adenomata were very small indeed. I have also found in some cases traces of small adenomata that had not been enucleated, evidently too minute to have been felt by the finger. This, however, is a negligible circumstance, as the growth of these tumors is so slight that years pass before they attain such size as to again obstruct the urinary outflow. Usually this does not come to pass, as the patient is of such an age when operated upon that he dies of an intercurrent affection long before there is a recurrence of his prostatic trouble. Personally I have never yet had a patient with a recurrence sufficient to worry him, although my oldest living patient had his adenomectomy performed by this method about nine years ago.

While the main objects of my remarks were to elucidate some points in the technique, I desire once more, in conclusion, to make an earnest plea for the substitution of the term "adenomatosis of the prostate" and "prostatic adenomectomy" for the present inappropriate terminology.

NOTES OF THE EXAMINATION OF THE URINE FOR TUBERCLE BACILLI.

Dr. John. W. Churchman (American Journal of Medical Sciences) writes as follows:

The well-known difficulties attending the accurate diagnosis of tuberculosis of the kidney and bladder make it important to use every possible device to increase the probability of finding the tubercle bacillus when it is present, as well as of eliminating all sources of error. In a patient recently seen I was able to make the diagnosis of vesical tuberculosis by finding the organism which had been previously overlooked. This patient was a woman who for two years had suffered from the usual distress attending bladder irritation. In spite of the persistence and severity of the symptoms, thorough search for tubercle bacilli had not been made. The urine was indeed so clear that one was justified in assuming no severe lesion of the bladder to be present; and the patient had, as a matter of fact, been regarded as a neurasthenic, a diagnosis which was justified by her temperament. Cystoscopy, however, showed a definite linear ulcer in the vault of the bladder above the right ureter, well away from the trigone. The rest of the bladder showed no definite changes, though there was slight dilatation of the vessels throughout. The ureteral orifices were normal.

It seemed to me necessary to obtain material from the surface of this ulcer if the diagnosis were to be made. I therefore distended the bladder with water to the point of discomfort—indeed, sufficiently to cause a slight hemorrhage—and saved the washings. In the washings after centrifugation, several clumps of tubercle bacilli were found; these had doubtless been washed off the surface of the ulcer. The ureters were both catheterized and the urine injected into guinea-pigs, with negative results. The patient is having the usual up-and-down career of vesical tuberculosis, and is thus far to be regarded as a case of primary bladder tuberculosis without demonstrable kidney lesion.

The important point brought out by the case is the fact that in vesical tuberculosis, if the ulcer is on the vault of the bladder, where it is seldom or never reached by the small amounts of urine present there at any one time, tubercle bacilli may quite readily be absent from the urine, or at least not present in great number. In such cases, therefore, and indeed in all cases of vesical tuberculosis, one should add to the catheterized urine to be examined for the organisms, washings from the bladder surface. In obtaining these washings it is, I think, advisable to allow fluid to flow in until the bladder is distinctly distended, so as to obtain material from its whole surface. I have been impressed with the frequency with which tubercle bacilli may be found in genitourinary tuberculosis if careful search is made. Indeed, I have thus far seen only one case, with

negative urinary examination, in which the guinea-pig inoculations were positive. In this patient the specimen was sent from a distance by the family physician and only one examination was therefore possible. In this urine the organisms were not found, though guinea-pig inoculations were positive.

The Presence of Tubercle Bacilli in the Urine in General Miliary Tuberculosis. Some years ago I endeavored to determine whether or not the smegma bacillus was present in the bladder. It had previously been shown that it was not present in the posterior urethra. The bladder urine was studied by aspirating it under aseptic conditions in routine cases at postmortem in the John Hopkins Hospital. In the first case thus studied I was surprised to find in the urine, after centrifugation and staining, many large clumps of organisms deeply stained with the carbol-fuchsin. These were at first interpreted as smegma bacilli, but on looking up the pathological report of the case it was found to be one of advanced general miliary tuberculosis, with lesions in the kidney, ureters, and bladder. This patient had gone to autopsy with a doubtful diagnosis. I then looked over the histories of the cases of general miliary tuberculosis at the Johns Hopkins Hospital and found that in nearly every instance in which the urine was examined for the organisms they were found present; but that in the majority of instances no urinary examination for tubercle bacilli had been made, although the sputum had been examined with great care. The point brought out by these observations is that in suspected general miliary tuberculosis (a disease, as is well-known, readily confused with typhoid fever and other febrile conditions) the urine should be examined for tubercle bacilli, for the value of urinary examination in these cases is far greater than that of sputum examination.

PRACTICAL VALUE OF ABDERHALDEN'S PREGNANCY TEST.

Dr. John A. Kolmer (Pennsylvania Medical Journal) in speaking of this test concludes as follows:

1. It is too soon to express a definite opinion of the specificity and diagnostic value of this reaction. Most reports have been based upon the dialyzation method. According to Abderhalden, Veit, Frank and Hermann, Franz and Jarisch, Petri, Judd, Schwartz and others the ferment is highly specific, and the test is of considerable value in the diagnosis of pregnancy.

2. The reaction appears in the middle of the second month, and disappears in from ten to fifteen days after pregnancy has been interrupted, regardless of whether the fetus is born before, at, or after the normal period of gestation. Nursing has no effect upon the reaction.

3. The reaction has been recommended in making an early diagnosis of pregnancy, when the symptoms and physical signs are indefinite; also in making a differential diagnosis between pregnancy and tumors of the pelvis.

4. The reaction is likely to be postive in hydatidiform disease and in chorio-epithelioma.

5. In acute febrile and cachectic diseases the serum may contain relatively large amounts of dialyzable compounds; positive reactions have occurred in tuberculosis of the female generative organs.

6. All investigators in this field are in general accord regarding the constant presence of the reaction in the serums of pregnancy, but there is a growing tendency to regard the ferment as nonspecific and capable of splitting the coagulated protein of other organs, and, indeed, of organs from the lower animals. I have come to regard a negative reaction of more value in excluding pregnancy than a positive reaction in establishing the diagnosis of this condition.

Abderhalden and his associates and numerous other investigators have reported that enzymes may be found in the blood serum of persons suffering with cancer. On this basis the test, conducted in the same manner as the pregnancy test except that coagulated cancer tissue is used as the substrate, has been advocated in the diagnosis of malignant disease.

Mention has already been made of the investigations of Fauser with the serums of persons suffering with dementia præcox and other mental diseases with various antigens composed of the ductless glands, testicles, ovaries, etc. These studies would tend to show that lesions of these organs may be operative in the symptomatology of these conditions and may open up a wider application for treatment with organ extracts.

The test has also been applied in the diagnosis of syphilis, tuberculosis and other infections, but sufficient work has not yet been done to warrant an opinion of its value in these conditions.

HEAT EXHAUSTION AND SUN-STROKE.

Here are two entirely different ways in which the body succumbs to overpowering heat. And the distinction is important because the treatment differs most radically. The patient with heat exhaustion is prostrated, his skin is cool or cold and clammy; his muscles are relaxed; his pulse small and frequent; his temperature below the normal. Wherefore he must be stimulated, with aromatic spirits of ammonia, till the doctor comes; a warm bath and hot water bottles to his feet—but no ice. Sunstroke (heat stroke or thermic fever) comes about generally through severe exertion whilst exposed directly to the sun or to high temperatures, as with tennis players or firemen. Alcoholics are very prone. In severe cases the victim falls unconscious and may die at once or after a few hours of coma and snoring respiration. Or he may speak of colored or indistinct vision; sudden arrest of perspiration and headache; then he will all of a sudden become dizzy, nauseated, vomiting, unconscious, with face flushed, skin dry and hot, pupils perhaps dilated, muscular spasm or convulsions, temperature perhaps as high as the clinical thermometer will indicate, a quick and bounding pulse, and breathing deep and labored. Put such a patient in as cool a place as possible, till the doctor comes, sponge and sprinkle him with ice water or rub him with ice. People who have had strokes must take no chances, especially cutting out alcohol.—Diet & Hyg. Gazette.

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TREATMENT OF RODENT ULCER BY X-RAYS.

The need for a clear understanding of this form of therapy when applied to rodent ulcers is emphasized by Kempster in his practical paper discussing the subject.—*(Practitioner.)*

He observes that in order to accomplish proper healing it is necessary that the superficial and deep tissues should, as nearly as possible, receive rays in equal quantity, of equal quality, and of sufficient intensity to cause death of the malignant cells; for, if this is not so, the effect of the irradiation will be merely one of stimulation, and our object will be defeated.

It is obvious that, if we expose the tissues to the naked rays, the surface will receive a much greater share of them than the deeper tissues, because the rays, being individually of varying velocity, have varying penetrative capacity. The surface will, therefore, receive the full force of the rays, and the deeper tissues less and less, according to the inability of the individual rays to penetrate, and also on account of their greater distance from the anticathode. This must always be the case, but we can equalize matters to a great extent by cutting out the short, soft and feebly penetrating rays, by selecting a "hard" tube, that is, one possessed of the power of producing a large number of rays of high velocity. By this means, we insure that a large number of them penetrate the whole depth of the diseased tissues, and thus relieve the surface of an overdose, while the deep tissues are only receiving a proper quantity.

It has been found by experience that this can be accomplished by the introduction of "filters," that is to say, substances which have the property of absorbing the short, soft rays, and at the same time allowing the hard, long rays to pass through. Filters may be composed of such metals as zinc, aluminum, silver, platinum, etc., or of non-metallic substances, such as leather or felt. It is now generally accepted that aluminum is the best substance for the purpose of filtration, and this is accordingly interposed between the anticathode and the patient in thin sheets of varying thickness, according to how many of the rays it is desired to cut out and the depth to which it is required to send the active rays.

We must, however, remember that aluminum is itself radio-active, and that the rays given off from it are liable themselves to set up an undue surface stimulation, and thus produce dermatitis. These rays must accordingly be prevented from touching the surface and this can be done by introducing another filtering substance, which is not radio-active, between the aluminum and the patient. Such substances are usually wash leather or a few layers of lint. These methods act very satisfactory in equalizing the dosage of the rays to the superficial and to the deep tissues, and thus make it possible to deliver a lethal dose to the deep cells while not inflaming the superficial tissues.

With regard to the quantity to be administered at one sitting, opinions vary widely. It is considered by some that the dose, which is fatal to pathogenic cells, is just as effective if administered by installments and the cumulative dose calculated. Kempster, however, does not consider this a reliable method, for he does not believe that

two half doses administered at intervals are equal to a full dose given at one sitting. He gives a full lethal dose at each sitting and when necessary allowing an interval to elapse before again proceeding, in which way he secures the death of some of the malignant tissues at each exposure.

THE INFLUENCE OF CHEMIOTHERAPY ON THE SURGERY OF THE CENTRAL NERVOUS SYSTEM.

According to Bland-Sutton disease was formerly regarded as something that entered the body, and the idea of evil spirits, or devils, entering men and women led, even before the dawn of Christianity, to surgical practice consistent with such belief, for there is evidence that the skulls of epileptics were trephined to afford incarcerated evil spirits a chance of escape. Fifty years ago our knowledge regarding the physical condition of the brain and spinal cord was of an elementary kind. It was the custom to teach that the cerebro- spinal fluid served as a waterbed for the brain in order to preserve it from harmful concussions. In his student days this teleological explanation tickled his fancy, and he suggested to the lecturer on anatomy when he waxed enthusiastic, after the style of Hilton, on this wise precaution of Nature, that the explanation was absurd, for the relative bulk of brain and cerebro-spinal fluid resembled an ironclad in a duck pond. Now cerebro-spinal fluid is used as a medium for inducing temporary paraplegic analgesia—a method of conscious anaesthesia of great advantage to the surgeon when he is called upon to operate in conditions where a general anaesthetic would be attended with unusual risks. The diagnostic importance of cerebro-spinal fluid obtained by lumbar puncture is not only great but its utility is increasing. Examination of samples of the cerebro-spinal fluid obtained by tapping the spinal theca is a routine in diagnosis. Flexner's demonstrations, that the olfactory nerves are routes by which the central nervous system, add a new interest the physiology of those remarkable secretary organs in the brain called "choroid plexuses."

In discussing influenzal meningitis he tells us that the fluid secreted by the choroid plexuses in infected monkeys contains an antiserum which escapes by the meningeal veins, and it may become possible to arrest the development of bacilli in the blood by means of compounds injected into the cerebro-spinal fluid. Here is a method of specific therapy unsuspected in our wildest dreams—Science transforming the cerebro-spinal fluid into a pool of Bethseda! Enterprising surgeons are now devising methods by which they can "trouble" the pool to the best advantage. No one can doubt that bacteriologists are in their methods as ingenious as surgeons. Crowe and Cushing ascertained that urotropin (hexamethylenamin) given by the mouth is excreted into the cerebro-spinal fluid and inhibits the growth of pyogenic bacteria. Surgeons turn this observation to practical account; it is now the custom to administer urotropin internally two or three days before an operation on the brain or spinal cord, and continuing it for a few days afterwards. Post-operative meningitis occurs occasionally in spite of it!

Orr and Rows have found that micro-organisms use neural lymphatics as routes of infecting the cord. Thus a bedsore or any septic area of the skin can lead to an infection of the spinal cord at a spot corresponding to the roots of origin of the implicated nerves. This will intensify the interest of surgeons in neuritis complicating septic lesions. The brilliant demonstrations that spirochaetes use the lymphatics of nerves as avenues for invading the spinal cord will modify the treatment of syphilitic diseases of the cord.

Intrathecal injections of salvarsan, in common with all arsenical compounds, irritate the spinal cord. To overcome this difficulty salvarsanized serum obtained from the patient is injected into his cerebro-spinal fluid and tolerated. This is a good example of practical ingenuity.

The results of surgical enterprise on cerebral tumors are unsatisfactory; the mortality is great and the condition of gliomatous formations makes them extremely unfavorable for operation, to say nothing of the difficulty in localizing cerebral tumors in non-motor areas. It is probable that compounds will be discovered that can be injected into the cerebro-spinal fluid and cause gliomas to shrivel in the same way that gummas disappear under potassium iodide, mercury or salvarsan, and thus abolish some of the most uncompromising operations of modern surgery.

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THE PLASTER CAST IN ACUTE JOINT INFECTIONS

By E. L. Cooley, B. S., M. D., St. Louis, Clinical Professor of Orthopedic Surgery, Medical Department, National University. Orthopedist to the City Institutions, etc.

The virtue of the plaster cast in the treatment of acute joint involvement lies in its presumed superiority as an immobilizing agent; therefore, in making a plea for its more extended use in this class of cases, two cardinal points present themselves for determination.

1. **Is immobilization the treatment par excellance in these affections?**
2. **Does the plaster cast offer superior qualities over any other fixation agent at our present command?**

First: As to the value of immobilization: In none of the various joint infections, save, perhaps, that of the "acute inflammatory" type, have we a specific medicinal agent, and this exception is by no means constant. Hence, drug medication must of necessity be largely expectant and empirical. Obviously the general law governing inflammations relative to absolute rest obtains with equal force here as elsewhere. Therefore, on general principles, immobilization should become a routine measure in the treatment of these cases. Specifically, it can be maintained that immobilization in acute joint infections, whatever the type or cause, lessens pain; diminishes swelling; limits peri-articular infiltration; materially lessens the chances of pus formation; and prevents deformity. A word explanatory of the last statement: Joint function is not materially or permanently inhibited by the extravasation of serum *per se* into the joint cavity or interstices. Only when the fibrin content is liberated and becomes inspissated does serious functional disturbance occur. This inspissated fibrin soon becomes organized; adhesions are formed and, if not checked, the process goes on to a true fibrinous ankylosis. In addition, the villi become hypertrophied through inflammatory action and further impede functional activity. Immobilization limits the serous exudate and in that far prevents fibrous ankylosis. Again, less villous change takes place in an immobilized joint; consequently, less functional disturbance. In view of the above facts and also in lieu of any successful specific drug medicament immobilization should be our sheet anchor in the treatment of these affections.

It must not be forgotten, however, that immobilization to be effective must be *absolute and complete.* No half-way measures will suffice. Fix both proximal and distal joints; if the knee joint be the one involved fix both the hip and ankle joints in plaster, cutting out a window over the affected area if necessary. Not only must joint movement be interdicted but muscle movement as well, and this can be done only through immobilization of the origin and insertion of all muscles either directly or remotely affecting the involved joint. For instance, it may not be patent on the surface just why, if joint function itself is estopped, unhampered functionating of the tibial muscle groups retards convalescence of an inflammed knee, yet the fact remains that recovery is delayed from this condition alone. Partial fixation is but little better than no fixation at all insofar as curative results are concerned.

Not only must immobilization be absolute but it must be instituted at the earliest possible moment. The lapse of a few hours often complicates an otherwise simple case. It must not be forgotten that while rest is the initial step it is not always the foremost indication at the outset, and under certain circumstances more radical measures are indicated. Suppurative pyaemic joints, which are frankly so from the outset must be treated on broad principle of thorough drainage at once, sacrificing everything to that

end. In these conditions however, immobilization is more imperative than in milder forms. The line of procedure involves the cutting out of a window sufficiently large to admit of adequate drainage operations; keeping the limb at obsolute rest throughout the acute suppurative stage, and instituting passive and active joint movement with massage and hydrotherapy as soon thereafter as practical. Completely restored function will in the majority of cases follow this line of treatment even though the inflammatory processes may have been grave and long continued.

Second: In the selection of a fixation agent the following points should influence our choice: (1) superiority in its particular field; (2) cheapness and availability. For while economical considerations should not influence our choice, there is a certain definite relation between low cost and popularity, and that which comes the more readily to hand is the agent generally used. Relative to the first point there can be no question or argument. The plaster cast is par excellence the best fixation agent at our present command, if absolute immobilization be the point objective; and this statement is made with due regard to the merits of the various devices, both medicinal and mechanical, now flooding the market. (3) The plaster cast is more economical and more accessible, and entails little or no more trouble in its application than does the use of other fixation agents. The physician should make his own bandages. The best grade of plaster costs in bulk about ¾ cents per pound. Hospital crinoline, the best material for the bandage itself, costs 4 cents per yard in bolts of 24 yards; the sheet wadding used for padding the limb costs 40 cents per dozen sheets. A plaster bandage four inches wide and twelve feet long, a practical size, would cost about three cents. The expense of putting on a complete spica involving one lower extremity, say, using twenty-four such bandages would fall well under one dollar. These bandages can be prepared at odd moments and kept constantly on hand the same as routine drugs. Any deterioration can be remedied by baking in a hot oven a half hour or so before use. Prepared bandage exposed to the air for periods of six months or longer are rendered fully as effective by heating as though kept in air-tight receptacles.

The question naturally arises, if immobilization is such a potent curative factor in this class of cases and the plaster cast so superior a fixation agent, why are not both more universally employed by the general practitioner? For it goes without saying that these factors receive little or no consideration at the hands of the attending physician; his chief reliance being placed in empirical drug medication with occasional sporadic efforts at massage, hydrotherapy, electricity and kindred agents. he will from time to time "take a whirl" at ointments, liniments, etc., but it rarely occurs to him to immobilize the inflammed joint. Divers reasons may be assigned to account for this phase of professional turpitude, chief among which perhaps are the following: (1) lack of knowledge as to the value of this form of treatment, due in great part to inadequate teaching; (2) dissatisfaction with, and consequent abandonment of, the method, due to failures resulting from unsatisfactory attempts at application; (3) unfamiliarity with the technical use of plaster; (4) a disinclination to depart from the beaten path, especially when such departure entails extra labor and trouble. Precedent governs here as elsewhere and, inasmuch as our confreres do not do it why should we? We apply a plaster cast (perhaps) in acute hip joint disease as a routine measure, but permit an acute gonorrheal or inflammatory rheumatism of the same joint to go unmobilized largely through force of precedent. The question naturally arises; if fixation is indicated in the one case, why not in the others? The limits of this paper will not admit of a lengthy discussion of this question, nor is it necessary to adduce reasons therefor; early pathological changes in inflammatory joint conditions are practically the same whatever the infecting agent; differing in degree of intensity and rapidity of action as a matter of course but all more or less aggravated by friction and attempted function; and the more severe the involvment the greater the need for eliminating these factors, whatever the reasons for the prevalent attitude of the profession toward this form of treatment the fact remains that the doctrine of immobilization in acute joint infections is safe, sane and sound; and that its wanton neglect arises from no lack of virtue, or through no fault of its own.

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THE HOLE IN THE LIGHT

By GEORGE RICHTER, M. D., St. Louis, Missouri.

About the light and the hole in the light I have read much in former years, but never made it a study. What I have to say of it to-day are reminiscences and the result of an inward development the stages of which hardly ever passed the treshold of my consciousness. I took care not to read up again, for then instead of a chat there would result a treatise on questions far beyond my horizon.

The hole in the light postulates the light, something real, positive, which is denied in part. For a hole is a partial negation of a positive whole. The "W" in whole proves that there is always a hole in a whole, or rather, that the whole contains a hole.

The light whose existence is affirmed is what our eyes perceive directly, the visible, the luminous. Just as sound, noise, and the peculiar assembling of noises called music are perceived only by the ear, odors by the nose, so we perceive light by the eye. The presence of material objects, of bodies we judge by the sense of touch.

But it must be considered that we do not f. i. feel the table, but an irritation of nerves, produced by what we call pressure or resistance. Such a stimulation of nerves enters our mind through the office of the brain in a more or less distinct manner. We judge, I feel a resistance. Acquired experience teaches that my fingers touch wood. The judgment is supplemented by other senses.

The sense of sight communicates the perception of light and colors. But this sense also requires supplementary evidence from other senses in order to arrive at an opinion as to the object seen.

I have affirmed the light as something positive, namely a nervous, sensory irritation. I mean to include the colors—where such a sensation has never entered into the experience of a being, there must be lacking, necessarily, the conception, the idea of light, its very thought, as in congenital total blindness. In no wise can the idea of light be conveyed. The blind to the light are like ourselves, who have no sensory organ with which to perceive directly electrical waves. We see the electric spark, we feel the electric shock—either as a pain or as a muscular contraction, we hear the thunder, but towards electric waves we are blind.

And therefore it has taken so very long until we have discovered evidence of their character. Now we have learned to recognize a variety of rays: the X-ray, the Hertz, the Mecquerel, etc., waves. But it was always on a circuitous route, in a roundabout way, by the aid of other senses, never by a specific organ.

Possibly there correspond to the countless possibilities an innumerable variety of activities. The experience of the last decades shows how little we know.

We are blind to-day to an unknown quantity of nature's phenomena.

Meditation on light reveals a remarkable fact; we cannot conceive of an absolute absence of light, for we define it as darkness, or black, in contrast to light, as "not-light." The blind-born would not understand the term.

There are certain limitations in our power of thinking, not only with reference to sensory experience. The mathematician states, there is no such a thing imaginable, as what seems to play a great role in our daily life; the Zero, the arithmetical cipher, the nought. When we say "take one, now take away or subtract one" which we claim to equal zero, the mathematician says: That is nonsense. To put down one, and not to put down one, is contradictory. The cipher in our calculations means "infinitely little, in number or measure." To us this sounds nonsensical, and yet the doctrine of the infinite, the infinitesimal, without which natural sciences could not be any more, is founded upon such calculus.

The question is now, can we imagine a zero of light, or not rather infinitely little light? Can we fancy an absolute zero in anything?

Our nerves, very specific ones at that, impart the sensation of heat and cold, of temperature. We think, the higher the temperature rises above the freezing point, the warmer it is, and vice versa, the lower temperature falls, the colder it must be. It refers plainly to our sensory perception. We are quite ready to concede that highest and lowest temperatures cannot be determined by our nerves directly, for obvious reasons.

But it is most difficult to imagine a condition in nature without any temperature at all. We assume the possibility of an infinitely high and an infinitely low temperature. "Aber nit!" says the naturalist. There may be an infinitely high, but there is no infinitely low temperature; with about 273 degrees below the zero of the centigrade thermometer all temperature ends. Here is the final zero!

We are dumfounded. Yet it is an undeniable fact. Conducted heat is a special form of motion of physical molecules. This motion increases with higher, decreases with lower temperature in direct ratio. Consequently there must be a lower limit at which all motion ceases. Various calculations have shown that the low limit of molecular motion is reached at the temperature stated; minus 273 degrees. A motionless condition is more readily fancied than extremest rapidity.

Also light is a form of motion, vibrations that can be measured with great accuracy. The qualities of light are: either more or less intensity, or color, or radiating heat, or, perhaps, electricity.

Can we imagine that what is understood to be a form of motion could also exist in the condition of rest? That would be another instance of one minus one, one and not one; nothing! Infinitely little and infinitely much light, yes. Absolute absence of light, no!

Profuse darkness is painful to many. Absolute absence of a stimulus could hardly cause pain. The missing but craved intensity is unpleasant—like in many other matters. He, whose eye-sight is failing is much more unhappy than the congenital blind. The latter is not aware of a deficit, the weak-eyed knows he is crippled.

Our sensory organs demand some stimulation. Inner life is smothered by exterior stimuli. Those who have paid attention to it will remember that in densest darkness occasionally plain sensations of light will occur, the result of retinal irritation by circulating blood which now, when external causes have ceased to obscure the innermost processes, become evident, "come to light."

When especially we city-dwellers discover ourselves in a region of absence of all noise, we begin to hear peculiar sounds, a distant humming and roaring, at times quite disturbing to the listener. The entire internal organic life is accompanied by molecular motions, occuring of course also in the sensory organs and occasioning innate sensations in him who understands to listen. Herein lies the charm of hermit life.

There are those hard of hearing who hear best when there is loud noise about them, which overlays, smothers the roaring in the ears.

He, who can see, therefore, knows only of a relative, not of an absolute darkness. It is the shadow, the negation in part, of light. The definition of shadow depends from the definition of light. Neither can be thought without the other. Light becomes light only by shadow, its opposite. Shadow is relatively less light. It is created when something is opposed to light, something which stops it in its straight linear motion and thus cuts a hole in the whole (totality) of the light. The hole is a negation in part. In part, I repeat. It is always understood, that there is a want, a deficit, a loss in a totality or an entirety. It always presumes a whole, of which, or in which it is a part, a hole. Else we could conceive it as little as the absolute zero, the nothing.

Suppose the light issues from a mathematical point; it will travel and spread in all directions, all around itself, in the shape of a globe, theoretically into the immensity of space. Suppose now at one point the rays issuing from such a lighting point are interrupted, stopped by an impermeable body. This opaque body will create a shadow, a hole in the light. The shape of this hole in the light must have the form of a pyramid, apex toward the light, the base in endless space. However small it may be, the dark point—dark only at the spot averted from the light (its own light), its effect reaches into eternity, if not stopped by an impermeable surface, which renders the shadow visible.

Its form, its shape is a mathematical figure. A vertical section on its axis (of the pyramid) will have the outline of the equator of its origin, its greatest circumference. But when the shadow is cast on an uneven surface, its appearance, when seen from any standpoint, will be irregular, and different again according to the position from which it is observed.

Suppose the body which casts the shadow, was itself an eye looking in the direction of the shadow, then the surface viewed by this eye, however uneven it may be whereupon the shadow is cast, will always seem to be the same, even form of its equator. So do we see ourselves. Others see us otherwise,

and none the same as we or others do. It is simply impossible.

The study of light traveling through a prism shows that light consists of, or is composed of color-rays, which, after having been reunited by a prism of exactly the same shape reappear as the original white light. Without any question, each and every one of these rainbow colors is per se somewhat darker, more or less, than the original white light. The white light is composed of many darker rays. One might put it thus; much darkness creates much light. Nothing nonsensical in that. A certain stimulation of a nerve causes a sensation of corresponding intensity; a large sum of such stimulations must create a much stronger sensation, which we call; white light.

Yet it is not quite so simple as all that. We have learned that the sensations of the skin are the product of quite a number or of a variety of stimuli. The simultaneous irritation of all of them is not simply pain. Special, specific nerves impart the sense of touch, others that of cold, others that of heat, others that of pain, others again that of tickling. A pin-point will be felt here as painful, there as temperature, and so on. An abnormal stimulation, however, may by so-called irradiation, impart a joint sensation of intense pain. Whoever has personal experience with hives will understand such phenomena quite well.

It is similar with the sensation of light. Different colors excite different nerves. Where they are altered, Daltonism, color-blindness will be observed. There is also a dark-blindness—nyctalopia. People so afflicted see less than others in the dark, though their eye-sight is perfect in daylight. Their opposite are the photophobes who see best in the dark, like cats and owls.

Most wonderful of all is the soul-blindness found in disease of the occipital lobe of the brain, where with eyes and optic nerves in perfect condition absolutely no light can be perceived. There is also a word-blindness, a type of aphasia, in disease of a certain region of the brain. The patient can see perfectly well, can read aloud, but certain words which had been destroyed in his psychic centre, he does not see at all, they are wiped out completely, and though he knows spelling, he cannot even spell them. These are veritable holes in the light.

Not all sensation of light comes from without. The seeing of sparks, light or colors on irritation of the optic nerve is an extraneous irritation. Hallucinations and dreams are of internal origin; they are purely mental manifestations, but undoubtedly due to certain disturbances of organic nature.

Here I must make mention of a delightful philosophical absurdity written by the great philosopher Fechner. Proof that the shadow is a living being. The same reasoning with which we assert that we live the shadow brings forth for his personal existtence. The shadow says: That clumsy body to which I am tied imitates all my movements. He is inert matter. I am something ethereal, a higher being. I can stretch at will over all space, or contract into seeming nothing; easily glide over all even and uneven surfaces, over the water and down abysses. He, that clumsy body, separates me from the ideal, the very highest, the most exalted which to reach that heavy thing prevents. But some day he will disappear, as the only earthly, which sticks to me now, and then I shall enter into the blessed, eternal, universal night.

We do not judge differently of ourselves. Our views of internal and outer life are just as logical. We see, hear, feel. Therefrom we conclude upon the existence of a material world. It is all nothing but a sensory illusion—or is it a hallucination?

Let me explain.

Though we all know with great certainty that our senses are deceptive, we measure the world according to the evidence of our senses. We know that we must not believe our senses, but again and again we are persuaded to believe all they seem to reveal to us. We are like the mighty ones, flattered by servants. Though well aware of their unreliability, we still make use of them—*faut de mieux*. High-minded we feel sure that we know best after all. We fancy we are light itself served by shadows. But this shadow viewed from an angle is but our carricature and we—a hole in the light.

A large variety of comical and serious sensory illusions are too well known to be ennumerated now.

Do our sensory organs communicate anything real at all?

A sensory organ consists of the specific end-organs, for instance the retina of the eye, of a nerve which conducts the stimulus from the end organ,—and of the corresponding area in the brain. The act of

seeing is an afferent process, stimulating the brain. There is also an efferent function, from the brain through a nerve into another class of specific organs, muscles, glands, resulting in secretion, or muscular contraction and locomotion.

In both cases, perception and motion, the nerve plays the same role, it conducts a stimulus (in both directions). The only difference is in the endorgans; peripheral muscle, gland or sensory organ, and centrally the brain-substance. The nerve is the electric wire. On one end there may be a telephone, or an explosive mine. The wire conducts the same electric wave. The endorgan lets us listen to spoken words or an explosion takes place. Crossing of wires may result in an explosion due to a spoken word.

Nerve-wires may be made to cross also in the living organism. It is not difficult to heal cut nerves of different endorgans crosswise, for instance the distal end of a muscle-nerve with the proximal end of a sensory nerve. After healing, function is reestablished, and stimulation of the sensory nerve will cause muscular contraction. Practically it is only for anatomical reasons, not for theoretical reasons, that we cannot heal together, crosswise, optical and acustic nerves. What would be the result? The irritation of the acustic endorgan, the ear, by sound, would be conducted to the visual centre and perceived as light. We would see the sounds. And again irritation of the retina by light and colors would send its dispatch to the auditory centre of the brain. We would hear a picture. The beauty of shape would be a symphony of sounds, the song would be a beautiful play of colors.—Sound and colors have often been compared.

Considering such facts, how about the reality of the outer world the reality of light and sound? Have we given to stimulation of specific endorgans an arbitrary definition? Is our brain a key-board on which extraneous stimuli play and produce ideas? And can such a piano tell us nothing else, but that various keys have been struck?

Let us recall some facts of experience. With the naked eye we see a fixed star of an enormous distance (as we are told). The astronomers have calculated the distance with great accuracy. From there light penetrates the universe, a light of whose rays an infinitely small part enters through our pupils. The astronomer attaches to his telescope, which by means of a lens of several feet diameter catches a few more rays than our small pupil does—and how little in proportion to the whole! —a spectoroscope, and now he states: There are on that remote star certain gases which exist also on our earth.

Which is more astounding. The human acumen which concludes so much from so little, or our arrogance in concluding so much from so little?

And now remember the crossing of wires —of nerve-fibres! And remember Gothe's verse in Faust: the Sun sounds its old harmony in rival songs with brother spheres.

Or—is there really a diversity of chemical elements, and of forces in nature? Perhaps there exists only one arch-force, dispersed by our brains into component parts, not unlike the dispersion of light by a prism? into many colors?

Again we are presuming the existence of an outer world.

The idealists deny the reality of the outer world. They recognize only a projection of stimuli into—what?—Is there anything outside of my own self? Are we walking in our sleep, life only a bad dream? Are we the light everything else shadow?

We might be that sham-existence of a shadow whose power of reasoning cannot possibly reach beyond its boarder-line, as Fechner has explained.

Everybody appeals to the plain facts of experience. It is after all the only foundation upon which our views can be based. This is the doctrine of realism.

There are persons who have been blind and deaf from birth, but who are still endowed with the sense of touch. With the aid of this one sense they have been educated. One has found them to be susceptible of an unlimited number of lines of thought, entirely independent of the ideas of light, color, sound, noise. The minor senses, smell and taste have been utilized only very sparingly in such education.

Now if the sense of touch suffices to awaken spiritual life and enables to transmit its communication, to form abstract ideas, one will hardly pronounce the sense of touch as the most important of all senses. An absence of all sensory perceptions would certainly imply and all kind—that would again be: one minus one, the illogical Zero-Organic life we define as an uninter-

rupted reaction upon stimuli. Lack of reaction is death. Reaction and sensation are identical, for sensation is not confined to sensory organs. They exist in the act of thinking (f. i. in dreams and hallucinations), they exist also independently from the brain, in reflexes. They are furthermore the manifestations of all life. All this has been postulated by the philosophy of Spinoza.

The lack of one sense is certainly a hole in the light. The scattering of light at the border of a body, giving rise to a penumbra, clears up a part of the darkness, they are the other senses.

How very incomplete our knowledge of the outer world is, how shadowy our senses of perception, how limited our senses, is proven also by the study of actions, of reactions discovered in other organisms of similar or analogous construction than we are. Certain insects respond to certain colors, evidently see them, which we do not see at all—the ultra-violet rays, whose existence is demonstrated by the photographic plate. Other insects produce sounds which we cannot hear. We observe how some of their cousins rasp or fiddle, as it were, with a leg on a toothed rib and we hear the desparingly monotonous song of the locust. Other species of the same class act the same way, but we hear nothing, because the sound produced by them is too high for our inner ear. The microscope has its limits of magnifying, not due to an incompetent technique, but due to the construction of our retina, which perceives only certain wave-lengths.

Some more holes in the light!

My introductory remark, light was something positive, is now refuted. The only positive is the fact that I think. Nobody could talk me out of this! I think, I cogitate, cogito, ergo sum. I think, consequently I exist. The old commonplace, the devil of Cartesius.

What makes me think? Impressions received from without me. Nothing being without a cause, an anxioma a priori, the excitation of the brain, resulting in thought. must come from without. For our axioma was that a stimuli cannot come from themselves, they must have a cause.

Analogy teaches us, that identical experience occur in the like of us. And we have all agreed to designate certain excitations of the optical apparatus as light or shade, others sound, others touch. If now in one person sensory nerves were crossed, so that his sensations differed from those of others, then—not the world would be changed, but only he. Natural phenomena would remain the same, only his powers to perceive them as we do, would be altered. However, his example would teach us, that our perception of that what is, depends entirely from our sensory organs. The facts remain the same. Only each one of us understands them somewhat differently, also without crossing of nerves. The Unknown casts a different light or shadow before each beholder, according to his position or station. Just as in process of court every eye-witness has seen the same thing or action more or less differently. The fact, the process of the world none denies seriously. The "how"—yes, how does the hole in the light look? Swear, you eye-witnesses! Each one is wrong. For only light itself, and shadow itself, can tell. We are outsiders, we cannot but look in a deceptive false perspective.

This false perspective is the source of all evil. Every man believes his perspective is the only correct one.

Let us consider what the hole in the light teaches. Light and shade: none could be without the other. Shade is created by light, light is created by shade. There is nothing that in itself is either good or bad. All that is, by necessity, all serves its purpose. It is the imperfect human thought, from which the good and the bad is derived. We must not say: light is good, shade is bad.

The hole in the light is the maker of light—and may be proud of it. The measure of perfection are the imperfections.

May this my effort, measured by its imperfections, incite you to greater perfection.

ARTIFICIAL KISSINGEN SALT.

Potassium chloride	17 parts.
Sodium chloride	357 parts.
Magnesium sulphate, anhydrous	59 parts.
Sodium bicarbonate	107 parts.

Dry the salts thoroughly, rub to a fine powder and mix intimately. Twenty-four grains of this mixture to 6 ounces of water produces artificial Kissingen water. To make an effervescent preparation, take of the above mixture 280 parts; sodium bicarbonate, 476 parts; citric acid, 400 parts, and powdered sugar, 25 parts, and granulate.—Brief.

APPENDICITIS: A REVIEW

By JOHN J. REYCRAFT, M. D., Petoskey, Michigan.

The last word has not yet been said upon this subject. Were it so, I would not deem it necessary to talk while so many die. The knowledge that so many good and honest men are doing this operation wrong makes me again enter into the discussion.

From observation in many cases I am convinced that there is no time that an offending appendix should not be removed. Many surgeons have placed artificial barriers around and about themselves in their relation to this operation which should not be tolerated. No matter how much pus is found in the abdominal cavity, it should be sopped out and the appendix removed, as a decaying appendix is a mighty poor thing to leave in an abdomen, especially if it maintains its stercolith. I would not be emboldened to talk so superciliously had I not experience to bear me out in my assertion. I cannot bear the thought that many surgeons hold that, to go beyond an abdominal paracentesis is hazardous in these cases, because I have tried it over and over again into the hundreds of times, and know from my low mortality rate that I am right, as such is almost nil. After having removed in toto the appendix and all it contains I find that I can reasonably expect that all will soon be well, whereas, if I do not do so I am ever confronted with the fear of the "fire works." How could an abdominal cavity, in which was retained a gangrenous mass together with several stones which may have been the occasion of all this trouble, be expected to absorb them in anything like the time reasonably expected to obtain for a recovery otherwise.

It cannot be, nor is it so; then why should men of good judgment in other matters stand appalled before the thought that what should be done is hazardous. Come out of it, forget what some men, who think they know, say and be venturesome enough to at least **try** to be reasonable. I **know** that I am right in this matter; why should you not try, and if you have doubts it would not be a bad idea to sacrifice a few of your erstwhile friends in the experimentation that I ask you to make. Go to it, my fellow practitioner, and if you find that I am wrong send back to me your findings, that I may be in turn convinced of my folly; nor can I say to you, do as a great oculist once said, Having spoiled a whole bushel of eyes he now felt competent to treat with intelligence and efficiency what afterwards came to him.

If I am right you should follow me, and if wrong you should correct me. I would not be so dogmatic in this matter only that, I am cognizant from experience, and what more can you ask of one who knows from contact surgically.

If a case comes under my observation the first hour, the first day, or the first week following the onset of an attack I always operate, and feel while doing so that I am doing right. Then enters my mind, the advice of some learned confrere who asks that we wait until the patient has taken all the hazards, has come out of the case after taking a chance at long odds only to go on the table and take an interim operation. Such advice is nonsense. If I were foolish enough to delay doing an operation at an opportune or inopportune time, would I not add insult to injury, or back water, when I should be going ahead, since experience has shown me that such methods are puerile and unworthy of the elaboration of men of action? Away with this thing forever, get right and stay where you belong, such pusillanimous advice as I have often been given spurs me to action and to dictation. The man who does an operation on a pus appendicitis where the pus enters the pelvic cavity is criminally negligent if he does not perform a colpotomy in the female; so desirable is this region for drainage that I sometimes feel that in counterpart for the vagina we should select the rectum in the male.

It would take a long line of argument to make me believe that abdominal drainage through the upper abdominal wall is nearly so efficient as the one that can be obtained by inter-abdominal pressure, plus the action of gravity. These thoughts I would not hold had I not, by actual experience, proven to myself, if not to others, that what I say can be verified by actual contact and finding in many, many cases in my own experience.

A tube placed through the male rectum into the male pelvis does not necessarily permit the patient to absorb large quantities of pus through the villi of his own bowels.

If you are afraid of obsortion, place the tube, an inch in diameter, through the sphincter and, proceeding to the point where you have made the incision, through the bowels of the pelvis; then, if any quantity of pus escapes along the side of the tube into the rectum it has an outlet. If this is true, you can at once, or later, close the abdominal wall and need have no further fear that a traumatic hernia may result. This alone is a great thing, aside from saving the life, for who of us glories in the fact that a resulting hernia is the penalty we pay for saving an existence. How can we expect to prevent such a result and have other than a traumatic hernia if we allow pus to drain past tubes in the outer wall for a period of weeks, with its corroding and debilitating effect upon the healing of the abdominal breach.

I never grow weary of making diatribes upon our good friend Ochsner of Chicago, who once did more harm with his advice for waiting three days before operating than he had ever done good. That advice alone has been the bulwark behind which thousands of timid and incompetent men have sought excuse for not doing the thing they should have done and leaving undone the things they should have done.

The length of time to wait before doing an operation on an inflamed appendix should not be considered for, like the little boy who when asked for the core of his apple, exclaimed to his solicitous companion, "there han't going to be no core," there is no time to wait, and the operation should never be delayed beyond the time required to get the patient to the hospital and make the most necessary preparations. The time required to make this operation should be as short as possible. Six minutes is sufficient in a clean case, and he who requires more than twenty minutes to do the whole work, no matter what has to be done, should not attempt it, but should turn it over to a more skillful man than himself. Never was the adage more in evidence, "Time is more precious far than gold." When a patient is weak and under an anesthetic the worth of moments cannot be told.

There is only one anesthetic and that is chloroform, because your patient goes under it quickly, bears it splendidly and recovers immediately when you have ceased giving it. The surgeon who has been sent for from several miles away and comes to your town bringing with him a huge machine, requiring two manipulators, to give a strange and unfamiliar oxygen from nitrous-oxid should be tabood and tolerated only on the occasion when something better is impossible to obtain.

A little bottle of chloroform and a handkerchief, administered by a handy nurse, is seven times seven in computation. We have had the sad spectacle that I have just mentioned in our vicinity, introduced from Grand Rapids, and knowledge is the reason whereof I speak.

I am not without the thought that I may yet be shown to have been wrong in these matters, but at present I feel very deeply that I am not wrong but right and, when I consider the numbers of competent men whom I know do not wish to be wrong and only need the instruction that I am giving in order that they may save the lives of thousands of valuable citizens and ameliorate the suffering of many thousands more whose condition is worse than death, it makes me greatly in earnest when I address them along this line and I feel that the indifference shown by many is not the indifference of the "don't cares," but the indifference which is produced by long usage in a half satisfactory method.

I may appear to some to be over zealous but my zealousness arises from no ulterior motive, but is born of an ardent desire to have things rightly viewed and rightly done. Presuming that I am right in my summaries and conclusions and that my advice is worth taking although sometimes derided, so earnest am I in these matters that I am often reminded of the predicament in which our Lord found himself when he gave forth the exclamation, "Oh Jerusalem, Jerusalem how oft would I have gathered thee as a hen gathers her chickens under her wings, but ye would not."

THE TOXICITY CAMPHOR.—D. J. Milton Miller, Atlantic City, N. J. (*Journal A. M. A.*), reports a case in which a baby of 18 months was given a brimming teaspoonful of camphorated oil by mistake, containing from 14 to 15 grains of camphor, without causing any symptoms of note. He mentions it because more or less alarming symptoms are often produced by much smaller doses, though fatal poisonings are very few.

A CASE OF HYDRONEPHROSIS IN A CHILD

By KATE W. BALDWIN, M. D., Philadelphia, Pennsylvania.

The case here reported is remarkable on account of the occurrence of this condition in so young a child, the ability of the infant to withstand the shock of such an operation, and the fact that the patient's development subsequently progressed in a normal manner.

E. J. E., a white boy, two years old, born of American parents, was admitted, February 11, 1911, to the Woman's Hospital of Philadelphia, suffering with hydronephrosis. His mother stated that she believed the child's condition to be connected with circumcision, which had been performed at the age of three months; as he had apparently always been in good health up to that time. Shortly afterward, she noticed an enlargement of the abdomen, which started under the ribs on the *left* side. This bulging remained in the position in which it had been first seen until the patient was a year old, when it began to extend upward and across the abdomen. He was taken to various hospitals, one after another, until he had been inspected at nearly all these institutions in the city. Finally he was brought to the Woman's Hospital, where I saw him.

Examination showed the child to be a well-nourished infant, of normal appearance, weighing twenty-two pounds and thirteen ounces. The teeth and the glandular system were in excellent condition. Heart and lungs were negative. A symmetrically enlarged abdominal mass was present on the right side, extending to within two inches of the umbilicus. The tumor gave a dull percussion note and exhibited a fluctuation wave. The left side of the abdomen was soft, and apparently no fluid was present there. The left lobe of the liver was palpable two inches and a half above the umbilicus. The spleen was not palpable. Nothing further of importance was discovered. The tuberculin test was negative.

A number of urinalyses were made on different days. These showed a specific gravity ranging from 1015 to 1020, an acid reaction, indican, sugar, a trace of albumin epithelial cells, a few leukocytes, amorphous phosphates, an occasional cast, and urea, .0125 gram to one cubic centimeter.

On March 7th, with the assistance of Dr. William Taylor, I operated, removing the right kidney with its attached cyst. The incision extended from the loin well to the median line, exposing the cyst-wall. The cyst, with as much of the kidney as remained, was freed and drawn out of the wound. The renal vessels were ligated, as was also the sac, without evacuation of its contents. The kidney and cyst were then removed, and an appendectomy was performed. The upper part of the wound was closed with through-and-through sutures of silk-worm gut. The lower part of wound was packed with sterile silk.

This operation, which began at 2:45 p. m., lasted half an hour. It was performed under ether anesthesia, the total amount used being seventy-five grams. After the procedure had continued for fifteen minutes, the child's pulse became very feeble, necessitating the administration of stimulants, including strychnin and atropin. At 3:05, camphor was administered. This was followed at 3:12 by hypodermoclysis, with enteroclysis of coffee.

The pulse-rate during the operation ranged from 88 to 160. At times, the radial pulse could not be felt. The respirations during the procedure ran from 27 to 40.

When returned to bed, the condition of the child was fair, although he seemed somewhat shocked. The temperature was 101°. The pulse was better, but weak at times; rate, 144.

The temperature, both before and after the operation, ran an irregular course.

The child recovered quickly from the operative shock and did not give the least anxiety at any time during the convalescence. The packing from the lower part of the wound was removed on the third day and the wound brought together with adhesive strap and closed in perfect condition.

The following is the report of Dr. Oberlin the pathologist, on the specimens removed at operation. The right kidney, with a large cyst, was removed, the ureter being attached. The total amount of fluid in the cyst was 2500 c.c. Its color was amber; its

odor, that of urine; its reactions acid, and its specific gravity, 1011. It contained a trace of albumin, but no sugar; and 0.9 per cent of urea. Microscopic analysis showed epithelium and a few red blood cells. The pelvis of the kidney was much distended, forming a large cyst. The calices emptying into the pelvis were also distended into small cysts. The kidney tissue was a mere shell, not half an inch in thickness at the thickest portion. Most of the collecting tubules were obliterated, being replaced by connective tissue. In some parts, this process was not yet complete. The lumen was destroyed, and there remained only a line of epithelium. The convoluted tubules showed a similar process. The glomeruli likewise exhibited connective tissue and complete hyaline degeneration. A few, however were comparatively intact. The diagnosis was hydronephrosis, congenital cystic kidney, and chronic obliterative appendicitis.

I saw this child again in February, 1913, when he was four years old. He seemed to be in good condition, and there was no evidence of any embarrassment from the loss of the one kidney. His weight was then thirty-two pounds and a half, and his development seemed normal in every way.

PLACENTA PRAEVIA.—The treatment of placenta praevia is the subject of an article by E. P. Davis, Philadelphia, in a recent issue of *Journal A. M. A.*, who says that it is an accident that causes hemorrhage and infection, and demands hospital facilities and experienced operators. Logically, he says, it is a variety of ectopic gestation, and as regards infection it is usually more dangerous than the condition ordinarily so called. Any vaginal hemorrhage in a pregnant woman is a warning of danger, too frequently neglected because it is often painless and the dangers of infection must be kept in view. Manipulation and vaginal examination and the use of the tampon should be avoided as far as possible. One classification of these cases is those where the os is not entirely covered by placenta and those where it is. In the hands of the general practitioner and in private houses the best treatment in the first class of cases is to rupture the membranes as extensively as possible when dilatation permits, and to give the patient tonic doses of strychnin and allow her to deliver herself, or at least to try to, before artificial delivery is attempted. In complete placenta praevia in the hands of a general practitioner in a private house, the Praton-Hicks method of bringing down the leg and breach of the child would give the mother the best chance. Anesthesia may be required. The placenta must be perforated by one or two fingers, combined version performed and the leg seized and drawn through the placenta. Under no circumstances should forcible or complete extraction be attempted, but a noose or bandage may be slipped around the child's ankle and a moderate weight attached if constant tension is desirable. The mother may then be stimulated as required, ergot and pituitary extract being avoided. Constant observation is demanded until labor finally develops and the fetus, if possible, is expelled spontaneously. Postpartum bleeding must be watched for and, following the delivery of the placenta, the uterus irrigated with hot 1 per cent. dilution of liquor cresolis of salt solution and the uterus, vagina and cervix firmly packed with 10 per cent. iodoform gauze. In hospital practice, with the mother in good condition and the membranes available for rupture, a dilating bag may be introduced and gradually distended, thus securing dilatation of the cervix and pressure on the placenta. With membranes unavailable and cervix resisting, prompt abdominal section will give best results for mother and child. Davis' experience with this comprises sixteen cases. "The method of operation consisted in opening the abdomen, turning out the uterus, incising it and immediately removing its contents. It was interesting to observe how completely hemorrhage ceased when the uterus was emptied. The uterine cavity was then thoroughly irrigated with hot sterile salt solution and packed firmly with 10 per cent. iodoform gauze carried through the cervix into the vagina. The uterus and abdomen were closed in the usual manner. The vagina was sponged out with mercuric chlorid solution and firmly tamponed with sterile or mercuric chlorid gauze. During the operation the patient received intravenous saline transfusion, and strychnin, digitalin and atropin were given hypodermatically." All the mothers recovered and six of the children.

DISPLACED AND MOVABLE KIDNEY IN WOMEN: ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT

By WILLIAM CUTHBERTSON, M. D., Attending Gynecologist, St. Luke's Hospital, Chicago.

The pathologic condition in women produced by displaced and movable kidney has not, in my opinion, received the attention it deserves at the hands of the medical profession. This pathologic condition of the kidney has been recognized for many years. Masue, of Venice, in 1561, seems to have been the first to draw attention to movable kidney. The ancient writers on the mobility of this organ are Francis Pedemontanus, in 1581 and 1623, and Riolan, in 1682. (Surgical Diseases of Kidney and Ureters, Morris, Vol. 1, 1903.) Riolan was evidently the first to call attention to the importance of this condition. We find much written on the subject in modern literature, but with such divergence of opinion that the subject cannot be considered as definitely settled by any means. These two conditions give rise to a train of morbid symptoms which are not recognized as often as they should be, and a woman suffering from them is condemned to a life of greater or less suffering, unless she falls into the hands of a medical man who recognizes the condition and affords her the relief to which she is entitled, either through surgical means or by some prosthetic appliance.

In the first place, all displaced kidneys are not movable ones, and it is not necessary to be able to palpate a kidney in the pelvis, or grasp it between the fingers and move it about in the abdomen, before it will cause symptoms sufficient to make a woman more or less of a chronic invalid.

It has been the experience of many of us to be consulted by women, generally of the thin, spare type, with long waists, who complain of a dragging pain in the loin, often shooting downwards into the pelvis, with disturbed digestion, gastrointestinal flatulency and a generally bedraggled air, who have run the gamut of their medical acquaintances for relief, only to be disappointed, until the true pathology was diagnosticated, and after the kidney was properly replaced, to see all their pains and aches vanish and a great gain in weight follow the surgical or prosthetic procedure.

I have repeatedly had women tell me their physicians advised them not to have their kidneys stitched up, as they would only prolapse again. They might as well argue against the radical cure of hernia, because some of the operated cases relapse.

The Capsule.

The kidneys are surrounded first by the fibrous capsule which adheres closely to the gland. Next they are enveloped and supported by a capsule of connective tissues derived from the parietal layer of the extraperitoneal fascia. This capsule contains a greater or less amount of fat, and when this fat is scanty the capsule may be mistaken for peritoneum or the fascia transversalis in operations on the kidney.

According to Longyear (1), these capsules are reinforced by still another, the perirenal fascia or Gerota's capsule. "This capsule is composed of the subperitoneal fascia which splits into two lamellae, upon the lateral aspect of the body on either side, from which the parietal peritoneum is reflected, to pass on to and over the ascending and descending colons respectively. At this point the fascia divides into two layers, one of which passes over the front, the other over the back of the kidney on each side. The anterior layer, after crossing over the kidney in front, is continued and joins its fellow of the opposite side; the other, or posterior, passes behind the kidney and is continued across the psoas muscle, to be inserted into the lateral aspects of the bodies of the vertebrae near their anterior surface. In that way there is formed a sac, which is closed above and below, and entirely so toward the median line of the body."

The fossae in which the kidneys lie are much shallower and wider in women than in men, hence the greater proportion of movable or displaced kidneys in the female than the male.

Frequency of Occurrence.

The late Byron Robinson, of Chicago, maintained that all women had palpable kidneys; that none of them were pathologic and consequently nephropexy was unnecessary. This, of course, was an extreme view.

Other authors vary widely in their estimates. Some base their observations on postmortem examinations; others from clinical observations.

A safe average would be from five to seven per cent in women, and two to three per cent in men. By these percentages I mean those patients who present themselves for examination for relief from an ailment which can be directly traceable to a movable or displaced kidney. There is no question but that a much larger proportion of people have displaced or movable kidneys, but as they cause no discomfort they are not to be considered in this connection.

Etiology.

It is well to first settle in our minds just what constitutes a movable or displaced kidney. I cannot do better than adopt the classification of Wilson and Howell (2):

1. Kidney which has merely prolapsed.
2. Kidney has prolapsed and lower pole has rotated inwards. In these cases there is usually no expiratory upward movement on abdominal nephroleptique, but the kidney will return to normal position on recumbency.
3. Kidney has prolapsed, lower pole rotated inwards and has further undergone anterior displacement. There is in this case no tendency to return to the natural position on recumbency, but the kidney tends to become more prominent immediately beneath the anterior abdominal wall.
4. Kidney has undergone rotation only; there has been no prolapse; it lies high up, and is often not palpable without an anesthetic.

It would seem that all the symptoms of displaced or movable kidney can be explained under this classification. Harris, of Chicago (quoted by Guiteras: Urology, Vol. 1, 1912, p. 407), divides the body into three zones— the upper, the middle and the lower—by drawing three planes through the body transversely. He takes the tips of the tenth ribs as the landmarks because they are fixed points. Finally, the distance between the upper sternal notch and the upper margin of the symphysis is taken and a line drawn between these two points upon which the length of each zone is noted. These measurements give us Harris' Index No. I. When this index is above 77 or 78, the kidney is palpable; when below, palpation is negative.

Excluding those cases of congenitally displaced kidney and Glenard's disease, the factor most productive of displaced kidney is traumatism. This may operate through the action of a fall, a strain, by tight lacing, or by a blow or crushing injury over the lumbar region, the latter occurring most frequently in men.

I have notes of two cases of displaced kidney occurring in nurses through stepping down suddenly from a high step; another occurring in a woman from being pushed from a street car and falling violently to the pavement.

It is claimed by some investigators that the lax condition of the abdominal walls following pregnancy is an important factor in the etiology, but as the abdominal walls have nothing to do with the support of the kidney, I do not consider pregnancy as playing any part in the causation.

The role which the abdominal muscles play is that of preserving the intra-abdominal pressure. How often do we open the abdomen through lax parietes and find the intra-abdominal pressure intact? As Carstens, of Detroit, has pointed out, the kidney is an extra-abdominal gland, and hence is not subject to the same disturbances as the intra-abdominal organs. For instance, we frequently find all of the abdominal contents in a state of ptosis, while the kidney remains in place, and vice versa. (Carstens, J. H.: *Amer. Jour. of Surg.*, January, 1912.)

An increase in the size and weight of the kidney must have an important bearing on its displacement downwards, such as chronic congestion, hydronephrosis, pyelonephritis, etc.

Cirrhosis of the liver, chronic enlargement of the liver from malaria and other toxemias are causative factors, by pressing on the kidney and tending to its displacement.

Mr. Lane has shown that adhesions may extend from the pylorus, the duodenum, and from the liver in the region of the bile ducts on to the anterior surface of the right kidney, hence an overloaded condition of the cecum, chronic constipation, together with a dilated and prolapsed stomach may all contribute to the displacement of the kidney.

When we consider the shallowness and greater width of the renal fossae in women, more especially in that type where the waist is long and narrow, where there is usually a minimum of fatty deposit, we can easily un-

derstand how readily all the before-mentioned agencies may act in producing this pathologic condition. I do not consider stone in the kidney in that connection, as that is in a class by itself.

Symptomatology.

Usually the first symptom of movable or displaced kidney is pain. This varies from that of a dull, aching character to the agonizing pain of Dietl's crisis. According to Fenwick (3), if the kidney is movable and the pelvis somewhat distended, the patient lies on the affected side for relief; while if the kidney with distended pelvis becomes fixed through inflammatory adhesions, the patient lies on the sound side.

If the kidney is displaced downwards towards the pelvis, the pain often simulates appendicitis and an operation for appendicitis has not infrequently been performed while the offending organ was a displaced kidney. On the other hand, if adhesions extend from the liver over the anterior surface of the right kidney, the symptoms may be mistaken for gall-bladder disease, especially when the gall ducts are encroached upon and jaundice is present.

Next comes digestive disturbances. The patient may suffer from gastrointestinal flatulence due to dragging on the duodenum and hepatic flexure of the colon by adhesions, and the accompanying interference with the digestive process. These symptoms may be associated with diarrhea, constipation or both alternately. One may be summoned to see a patient suffering from Dietl's crisis and on examination a displaced rotated kidney will be found which is much enlarged and exquisitely tender to manipulation.

Hematuria is a more or less constant symptom, and is due to back pressure on the parenchyma of the kidney from an over-distended pelvis.

Frequent gushes of urine are frequently complained of by the patient. This is brought about by an over-distended kidney pelvis emptying itself at intervals. This is one of the most constant symptoms which I have found in kidney displacement. When the ureter becomes kinked from its abnormal situation, a greater or less degree of hydronephrosis is produced, and when from over-distention the kink is straightened out, a gush of urine occurs which is sufficient to attract the patient's attention.

The ureter, owing to its being fixed by the post-nephric fascia, at first does not prolapse with the kidney, but as the descent progresses it becomes loosened from its position, and the kidney, pushing the perirenal fascia before it, together with the lengthened artery and vein, form a false meso-nephron. This meso-nephron may be long enough to permit of the widest excursions of the kidney throughout the abdomen.

Another important factor in producing pain is where the ureter is curved over an aberrant renal artery. In some of these cases a very slight rotation or displacement of the kidney produces a ureteral kink, with its accompanying pain. In this latter type, owing to the intermittent obstruction of the ureter, hydronephrosis is most often produced. A complete and persistent obstruction of the ureter will cause kidney atrophy.

In cases of rotated kidney where there is little or no displacement downwards, the patient complains of pain in the loin of a sharp, lancinating character. These cases are hard to discover unless placed under the influence of an anesthetic.

Fenwick (4), by a series of radiographs, shows how pain and pathologic symptoms may be produced by a very slightly displaced kidney. When the gland has a downward displacement and outward rotation of the lower pole, no kink is produced in the ureter, hence we have no symptoms. This can be understood when we consider that in many cases of downward displacement of the kidney the ureter moves with it; therefore, there is no obstruction to kidney drainage and there is no pain. Where, however, there is axial rotation, or downward displacement, with rotation of lower pole inwards, there follows ureteral kinking, obstructed drainage, with back pressure, producing pain and also hollowing of the gland.

Finally, in cases of movable or displaced kidney we have a large number of patients who suffer from pronounced nervous disturbances, sometimes bordering on melancholia. Whether these nervous symptoms are caused by the kidney condition, or vice versa, I am not prepared to say, but will leave that to the neurologists. All I can say in this regard is that it is perfectly wonderful how these symptoms will disappear in many cases and the patient gain in weight and strength after the gland is appropriately fixed in its normal position. Suckling has reported an enormous number of neurasthenic and mental cases which he claims were due to misplaced kidneys, and

which were cured after operative replacement of the organ.

Diagnosis.

We must not conclude that because we have discovered a displaced or movable kidney that all the symptoms of which the patient complains are due to this condition. It is only after most exhaustive examination and the careful exclusion of all other causes that operation is to be recommended.

The method which I have found to be most efficacious in making a diagnosis is to place the patient on a short, flat table, with the feet in stirrups, and the head well supported by a fair-sized pillow. In this position the abdominal muscles are well relaxed. With the right hand (in case of the right kidney), the abdomen is carefully palpated, especially up under and below the right costal arch. If the kidney is at fault, the patient will soon complain of a tender spot. Then the left hand should be placed behind the loin and an effort made to grasp the kidney between the two hands. If it is markedly displaced, it can be easily manipulated with the fingers, and its size fairly well estimated. If only partially displaced, the portion of the kidney below the last rib may be mapped out. Very frequently on rolling the organ between the fingers of the two hands it can be felt to slip back into place with a distinct jerk.

I now have the patient put her feet down and assume the sitting posture. Directing her to take a deep inspiration, the excursion of the kidney may be estimated. Then, still grasping and holding the kidney between the fingers, the patient is told to lie down again, when the kidney may be felt to move with great distinctness.

In case of the left side, this procedure is reversed.

The kidney may be all the more readily palpated if any degree of hydronephrosis is present.

An aberrant kidney must be differentiated from the following:

1. An empyema or hydrops of the gall-bladder.
2. Large-sized gall-stones.
3. An extra lobe of the liver (Riedel's lobe).
4. Solid or cystic tumors of the ovary.
5. An obstipation or malignant growth in the colon.
6. Appendicitis.

It is usually fairly easy to differentiate a kidney lesion from any of the above by the clinical history and careful palpation. The kidney may be replaced into its proper position; the others are usually fixed. An infected gall-bladder or supernumerary lobe are continuous with the liver dullness and cannot be pushed back.

By using Bastedo's method of inflating the colon with air, there is usually resonance in front of the kidney; in the others it is absent.

On examining the urine when the kidney is at fault, albumin, blood and casts are frequently present; in the others absent. I had one patient, a woman, who had enormous gall-stones, forming a tumor not only palpable but visible, and another patient, a man, in whom an exceptionally large gall-stone ulcerated its way from the gall-bladder into the hepatic flexure of the colon. In these two cases it was questionable at first whether the tumor was caused by the kidney or was in the bile passages. A minute, careful, bimanual examination soon cleared the mater up.

In another patient I operated for enlarged, displaced kidney, only to find that organ normal, while an anterior incision disclosed a desmoid of the left ovary, with a long pedicle, which had become lodged under the left costal arch.

In the cases where there is a long mesonephron the patient will very often make a diagnosis herself. The kidney may be easily grasped and its size and shape make the diagnosis unmistakable.

Occasionally a kidney will lie in the right iliac fossa, and unless care is taken it may be mistaken for appendicitis. I do not belive that a displaced kidney is ever the cause of appendicitis, but there is no reason why the two conditions may not be coincident.

Finally, in these cases of slight displacement or rotation of the kidney the method of Fenwick may be resorted to and a radiograph taken. He and others claim that the capsule of a displaced kidney is always thickened, and this causes a shadow to be outlined by the X-ray, showing the abnormal position of the gland.

In none of my cases have I met with an associated tuberculosis, pyonephrosis, or stone in the displaced kidney, but they have all been greatly enlarged and congested by interference with the blood supply.

There are two ways open to the medical man to remedy this pathological condition: First, by prosthetic appliances, and, sec-

ond, by surgical means. In thin women I have been able to apply a kidney pad which will hold the kidney in place and relieve the symptoms. As soon as the wearing of this pad is discontinued, all the symptoms return. The great objection to the pad is that it is very uncomfortable to the patient, especially in the summer, and soon becomes burdensome. The most satisfactory treatment in this condition is purely surgical.

Short (5) reports 30 cases treated by the following methods:

	Cases.	Cured.	Comp. Relief.	Little or no Relief.	Death.
1. Transcortical suturing	14	9	1	4	0
2. Fixation by capsule only	8	3	3	1	1
3. Pure carbolic acid and gauze sling	8	5	1	2	0

In the transcortical suturing the sutures were passed first through the capsule which had been stripped off and then through the kidney substance. Second, the capsule was stripped off and sutured on either side to the muscles of the incision. Third, the capsule is swabbed over with pure carbolic acid, the kidney replaced and supported by a gauze sling. He points out that the greater proportion of successes resulted from the carbolic acid gauze sling method.

Treatment.

Rest in bed and the application of heat or cold, with the administration of sedatives, are only applicable in cases of Dietl's crisis.

Massage and electricity are only mentioned to be condemned, as they are nothing but a waste of time.

My experience would indicate that the ingestion of highly nutritious foods, with the object of increasing the perirenal fat, is not to be depended on, as two of my cases which relapsed both gained twenty to thirty pounds in weight and still the kidney does not stay in place.

I am not going to review all the surgical procedures recommended for the fixation of the kidney, but merely call attention to two.

Billington (*Illinois Medical Journal*) reports a large number of successes by stripping off part of the fibrous capsule and hanging it over the twelfth rib, reinforcing it by catgut sutures through the kidney.

Carstens, of Detroit, makes a vertical incision in the back at the junction of the erector spinae and quadratus lumborum muscles, and after separating them incises the fibrous capsule by a Z-shaped incision, without delivering the kidney, and stitches the cut edges of the capsule to the edges of the muscles on either side with a continuous catgut suture. He re-enforced this by a broad strip of adhesive plaster extending from one side of the body to the other, diagonally, after the incision has been closed.

I have had an experience in operating on twenty-five cases. Of these I have reports on fifteen. In only three of these fifteen cases had the kidney again become displaced during a period ranging from five years up to the present. One peculiar feature of the relapsed cases is that none of the distressing symptoms, such as pain, flatulence and indigestion, which existed prior to the operation, have recurred so far. My only explanation is that at the time of the operation the kinks of the ureter were straightened out, the adhesions broken up, and in the new descent the kidney has prolapsed in a different direction.

In this connection I would like to report a case with peculiar features. When operating on a patient for prolapsed kidney I found a very dense band extending from the kidney downwards over the ascending colon. This is what Longyear terms the nephrocolic ligament, but which I have not found to be constant. After replacing the kidney I thought I could better support it below by stitching the severed adhesion to the lumbar muscles. Forty-eight hours after, to my consternation, I found the patient suffering from obstruction of the bowels, this adhesion in its new position evidently constricting the lumen of the large intestine. I immediately reopened the wound, and, cutting the sutures holding the band, the obstruction was relieved and the patient recovered.

In this series of twenty-five cases I have only found one in which the displacement was double, the other twenty-four being on the right side. This patient was suffering from profuse hematuria, which the replacement of the right kidney relieved.

My method of operating has consisted in opening the loin by an incision from the outer side of the erector spinae muscle, beginning at the lower margin of the twelfth rib, and extending obliquely downwards

and forwards above the crest of the ilium, as far as necessary. Through this incision the kidney is delivered, examined carefully for stone, hydronephrosis, or tuberculosis, the fibrous capsule incised along the convex border, the capsule peeled back on both sides and rolled up. Three sutures of No. 3 chromicized catgut are first put through the transversalis fascia and the muscles on the outer side, then through the capsule, the kidney cortex, the inner roll of capsule and, lastly, through the muscles on the inner side of the incision. One suture is placed at the lower pole, the second through the middle of the kidney, and the third through the upper pole. The kidney is then replaced and pushed up into its natural position, taking care that its normal axis is restored, and the sutures drawn comfortably tight and tied. Next, Senn's method of placing gauze below the lower pole in the space formerly occupied by the displaced kidney is resorted to, the end being brought out of the wound for drainage. The incision is then closed by long stout silk-worm gut sutures, and a large copious dressing applied.

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3. Fenwick: Brit. Med. Jour., vol. 1, 1911, p. 8.
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EXPULSIVE RETROCHOIROIDAL HEMORRHAGE FOLLOWING CATARACT EXTRACTION.—Dr. H. M. Starkey (*Journal of Ophthalmology and Oto-Laryngology*) reports the following case:

The patient was Mrs. W., aged 87, an acquaintance and patient for about twenty-five years. Commencing central opacity of the right lens was first noted April 20, 1906, and a little later cataract also began to develop in the left eye and progressed until in 1913 there was good perception and projection in the right, while in the left scarcely sufficient sight remained to enable the patient to get around her own house. Incidentally it might be mentioned that during this time a hyperopia of 2 D. was converted into a myopia of 4 D.

During the past few years the patient's general health had been rather precarious, and while operation was frequently requested, consideration of it was postponed from time to time until the health should continue favorable for a longer time. During the first part of 1914 the condition steadily improved until by July it was felt that the desired operation might be permitted.

There was nothing in Mrs. W.'s condition to cause more fear of hemorrhage than in the average patient, but rather the contrary. Her arteries were not degenerated, her physician, Dr. Helm, having stated that the arteries were more those of a woman of sixty-five than of eighty-seven. The blood pressure a short time before the operation was one hundred and thirty and never seemed much above that.

It was decided that the greatest safety lay in a preliminary iridectomy, and this was accordingly performed July 9. The patient was quite nervous about the operation and made a sudden movement as the section of the cornea was about complete, so that the point of the keratome punctured the capsule, but a good iridectomy was done. The patient suffered a rather severe shock with nausea and vomiting lasting a day or two, but made a good recovery with satisfactory coloboma and white sclera, so that by August 12 it was considered advisable to proceed with the extraction, in which he was assisted by his colleague and good friend, Dr. Fringer. The operation was typical, the section being smooth and ample and the lens coaxed out with a minimum of pressure or other manipulation. The speculum was removed and the patient, who had behaved very well, was told that the operation was over and that she should rest quietly with lightly closed lids for a few moments when the eye would be dressed and she could return to her room. Very quickly a little vitreous appeared between the closed lids, the patient commenced to groan with pain, more vitreous and then blood appeared and then the hemorrhage became quite profuse and the pain very severe. This hemorrhage lasted perhaps five minutes. It was impossible to tell just what ocular tissues were present in this escaping blood.

The patient suffered very severe shock and was so reduced that death seemed imminent for several days. She had gradually improved, but even now, after two months, was so weak that she could not sit up at all.

The eye healed in a few weeks and there was now little irritation. The upper part of the cornea was opaque, but there was but slight atrophy of the globe, showing that not all the contents of the eye were expelled.

There had been so relatively few of these accidents reported that it was deemed advisable to add this one to the list.

ABSTRACTS

EXSTROPHY OF THE BLADDER.—J. Ambrose Johnston, gynecologist to St. Mary's Hospital, Cincinnati, cites an interesting case of exstrophy of the bladder in the *Lancet-Clinic*. He says:

Exstrophy of the bladder is fortunately a rare deformity. I have seen only two cases in thirty years' practice.

The word exstrophy means eversion, or turning inside out, of a hollow organ. Estrophy of the bladder is a term used to designate a condition where the anterior vesical wall and an equal portion of the parites are wanting, with an eversion or pouting of the posterior wall. Generally there is no urethra, and ununited pubic bones are part of the deformity. The urine can be seen jetting alternately from the ureters. The mucosa is red and a slimy discharge is present.

Binnie, in his latest book, speaks of two forms: complete and incomplete. He cites patency of the urachus as the incomplete form. Patency of the urachus can not come under the term exstrophy, because here the bladder can not turn inside out. The perfect bladder with urethra is patent but not exstrophied.

Exstrophy is due to failure of the abdominal laminæ to unite in early fetal life and is analogous to harelip. The umbilical cord has been said to be a causal agent by some writers who allege that the genital site is pressed upon by the cord getting between the legs and being drawn tight, thus interfering with development. Perhaps the same reasons apply for non-closure here as for harelip, and, as by no mental process can the cause of harelip be laid to the umbilical cord, this structure can be eliminated as a cause.

Less degrees of nonunion of the laminæ of the lower abdomen are frequently found. A narrow furrow over the symphisis, from the umbilicus to the vulva, indicates a fissure just avoided. A deeper furrow may divide the clitoris or cause the urachus to remain open.

Eversion of the bladder through a dilated urethra is a most unusual form of displacement and is not to be mistaken for exstrophy. It appears between the labia as an ovoid red mass. A careful search will reveal the orifices of the ureters on the under side. Eversion is observed oftener in the aged and in young children. It is produced by increased intra-abdominal pressure associated with a relaxed bladder wall and a large dilated urethra.

An exstrophied bladder by constant rubbing of the clothes may become carcinomatous.

Results in the treatment of exstrophy will vary according to location and extent of the malformation. If the urethra is normal there is a possibility of making a small bladder with a simple plastic operation. The making of an external reservoir with the semblance of a urethra which has no sphincteric action is futile. The urethra being absent the only recourse then, so far as an operation goes, is to transplant the ureters into the sigmoid; and Maydl's operation is perhaps the best of the transplanting methods. This consists in dissecting both ureters with their surrounding bladder wall loose, and fixing this portion of the bladder in an opening in some convenient part of the sigmoid. After the transplant has been completed the remainder of the bladder is to be dissected away and the wound allowed to heal by granulation.

Many ingenious operations have been devised to correct bladder malformations. Recently, a French surgeon (Lerda) published an ingenious operation for the making of a urethra. He dissected up a tongue of skin from the perineum with an attachment at the perineo-anal junction; then with a forceps an opening was made from the bladder through the perineum, down between the sphincter ani and the wall of the rectum, coming out in front of the skin flap; the tip of the skin flap was caught by the forceps and drawn back through this opening, thus forming the posterior and lateral epithelial walls of an artificial urethra; the tip of this tongue was sutured to the bladder well; the epithelial lining of the anterior wall was provided for by wrapping a skin graft around a glass tube with the epithelium next to the tube and placing this in the canal. In Lerda's case there was a tendency to stricture which necessitated periodic dilatation. There was a partial incontinence of urine. In pressing as for defecation he emitted about 150 c.c. of urine. During the day, there escaped from the perineal opening enough urine to compel the patient to wear a urinal; this was due to a weak sphincter ani.

Another unique method of dealing with exstrophy is the operation of Makkas. To avoid

connecting the ureters with a fecal contaminated cavity, Makkas excluded the cecum from the rest of the intestinal tract by separating it from the ascending colon, also from the ileum, and then closing both openings; the ileum is then anastomosed with the colon or the sigmoid. Then a vent is provided for the cecum by doing as appendicostomy. At a later date the ureters are implanted into the segregated cecum. In Makkas' case, continence was not absolute, as drops of urine escaped when the patient moved about.

To implant ureters in the sigmoid, a well-functionating sphincter ani is absolutely necessary. Disease of the kidneys forbids the operation. Children under ten years of age are bad risks, as the mortality is high. Opel, of St. Petersburg, in a series of his patients, noted that symptoms of unilateral or bilateral pyelitis set in shortly after operation, but that they again disappeared after a time. It might be well, prior to a transplanting operation, to immunize the patient against the colon bacillus.

In young children and when operations are contraindicated or refused, some kind of a urinal can be tried. The rubber urinals manufactured for these cases are as a rule unsatisfactory, as they press upon and irritate the mucous membrane of the bladder. It is said that the best form is a silver, or German silver, or perhaps aluminum urinal which is fashioned to arch over and protect the bladder; the lower portion should be a catch basin into which the urine runs and from which a rubber tube conveys it to a rubber bottle. In order to get a good fit a plaster of Paris cast could be made and trimmed so as to get a good form from which the metal urinal could be made. Sheet lead could be used to make a form for making a permanent piece. A urinal which will catch urine when the patient stands will not do so when the patient lies down.

Cognizant of the discomforts of exstrophy of the bladder and the dangers from the various forms of operations, I am led to feel like advising such patients not to resort to surgery, but "to bear the ills they have than to fly to others they know not of."

WRIGHT'S SOLUTION: A SUBSTITUTE FOR ANTISEPTIC SOLUTIONS.—G. K. Dickinson, in the *Medical Record*, says the recent epidemic of suicide and disaster with bichloride tablets makes a statement as to the excellent properties of Wright's solution timely.

The medical profession as well as the public have long been employing washes for wounds, sinuses, and running sores of all kinds, so it will be impossible to prevent this type of domestic treatment, for that which is customary in clinics and at hospitals will become popular with the public.

In the preantiseptic days balsam of Peru and balsam of fir were used for wounds. They had stimulating properties and in a mild degree produced a hyperemia, but did not aid the serum and were dirty and ineffective.

Lister introduced carbolic acid to the profession and it reached the public mind. By it bacteria were killed, but chemical pus was formed. Local irritation, disturbed healing and its absorption frequently resulted in irritation of the kidneys.

Then came bichloride of mercury and its allied compounds. These could be easily compressed into tablets and were kept in the hospitals and clinics for immediate use and also in the home on the closet shelf alongside other tablets of similar appearance.

Bichloride is not an ideal. It coagulates albumen. It is destructive to tissue as well as to microbes. It does not assist Nature in producing local hyperemia and bringing out the serums for wound healing. To be potent in a reasonable time, it must be made in strong solution.

Practically the majority of solutions used in surgery have not been potent because of the time required for antibacterial effect and the little time given for this purpose.

At our clinic in Christ Hospital carbolic was discontinued years ago because of dermatitis, bloody urine, and other disturbances following its use. Bichloride has not been used for over two years, nor has any other antiseptic been employed in the treatment of wounds.

The delightful effects of the Wright's citrated isotonic solution* came to our attention and for the last two years nothing but it has been used. In all the thirty-seven years we have been attending surgical cases never have we noted such prompt results and such beneficent effect as obtained by the *proper* application of this solution. We have practised long enough to be accustomed to the novel and the specific in action, but nothing in the surgical treatment of wounds has pleased as much as has it.

It is helping Nature on her own lines. Nature heals through hyperemia. The salt in the solution produces a mild hyperemia. Nature sends the phagocytes and opsonins into the wound. The citrate of sodium keeps the

*Formula: Sodium citrate, 0.5; sodium chloride, 3.0; distilled water, 100. From Wright's "Studies on Immunization," p. 464.

wound itself free from deposit and allows of the permeation of the healing serum. Wounds are embarrassed by the accumulation of dead leucocytes and decomposing serum, and the presence of microbes in this accumulation, which neither the mercury salts nor the phenols efficiently controlled.

Wright's solution keeps the wound clean, favors proper granulation, and hastens the separation of small sloughings. To be properly applied there should be sufficient gauze kept *well-sopped*. If hospitals and clinics would but thoroughly try out this simple, cheap, and physiologically effective method, the public would soon follow suit and the bichloride tablet and its dangers would disappear.

During the two years in which it has been in constant employment in Christ Hospital it was used at first only for wounds that failed to heal (such as after appendicitis operations), and those that had become infected. The more it was used the more confidence we had in its ability to cleanse and promote the healing processes a la Nature. Boils were effectively treated by it. A huge carbuncle on a big neck was incised, then gauze applied and kept sopped with Wright's solution, the gauze being changed frequently. There was an improvement in conditions and a cleansing and recuperation beyond that ordinarily expected. In erysipelas and lymphangitis gauze kept sopped added to the comfort of the patient and controlled extension. The solution as an irrigant at a temperature of 110° plus, is also used with great success in vaginitis, septic endometritis, and in infected wounds following gall-bladder surgery.

One should not be too enthusiastic in the estimation of the value of therapy, but it has long been recognized that the truth is always simple, and that the things that cure are seldom complicated. One cannot controvert the idea that when a physician is curing a patient he is aiding Nature. If the patient recovers in spite of the treatment, however, the treatment cannot be said to be not on a line with Nature's method.

According to the experience gained at Christ Hospital the sooner the profession relegates the chemical antiseptics to the background and follows out the ideas promulgated by Wright, the more sensible and the more successful the treatment will become.

A patulous os externum in a woman with metrorrhagia who has recently aborted or has been delivered nearly always implies that there are retained fragments of placenta causing the hemorrhage.

THE CLINICAL MALIGNANCY OF PSEUDOMUCINOUS CYSTADENOMA OF THE OVARY.—Solomon Wiener, Adjunct Gynecologist to Mount Sinai, in the American Journal of Obstetrics says that however useful the anatomical criteria of the malignancy of a neoplasm may be, when we come to an estimation of the destructive powers of cystadenomata of the ovary this form of classification utterly fails us. The nonpapillary variety of pseudomucinous cystadenoma of the ovary is by all authorities admitted to be one of the most benign of all ovarian cysts. (We do not propose to include the papillary variety in this discussion at all; its tendency to malignant degeneration is well known.) Yet this type of adenoma can cause death just as surely and just as swiftly as an adenocarcinoma.

Pfannenstiel claimed that two-thirds of all ovarian cysts were of this variety. A description of their structure may be found in any text-book—a cyst wall of connective-tissue lined with a single layer of high cylindrical epithelium, the contents varying from a thick gelatinous consistency to that of a thin syrup. They usually are multilocular, grow slowly, and may attain enormous size. In about 98 per cent. permanent cure is obtained by operation. However, in 1½ to 2 per cent. a symp tom complex arises in which the patients die with the picture of pelvic carcinoma (Pfannenstiel). This percentage does not include those cases in which an incomplete oophorectomy was done, nor those in which the disease occurs in the remaining ovary (2 per cent.). He claimed that "metastases" occurred only by implantation, their site being either within the abdominal cavity or in the scar in the belly wall. That there is a third method of spreading, namely, as true metastases carried to distant organs by means of the circulatory system, seems to have been established in a more recent contribution to the literature (*vide infra*).

The implantation metastases in the abdominal wall are not of great clinical significance unless they undergo a carcinomatous degeneration. Such cases are outside the bounds of our present discussion. We propose to adhere strictly to those tumors which retain absolutely their histologically simple and benign structure. The one form of tumor extension which is of clinical importance is by intraperitoneal implantation. This occurs after either spontaneous or traumatic (puncture) rupture of the cyst with extravasation of its contents into the peritoneal cavity.

Implantation growth does not necessarily follow upon extravasation of cyst contents.

The important fact is that it may. The viability of the extravasated cells must vary with the individual tumor. While some will continue to proliferate steadily and rapidly, others seem to die off.

The assumption of local intraperitoneal malignancy (if one may be permitted to coin such a phrase) once the cyst contents have passed beyond the confining wall of the capsule, is doubtless of far more frequent occurrence than is generally realized. What applies to pseudomucinous cystadenoma in this respect, applies with even greater force to all other ovarian cystadenomata. This teaches an important lesson in their treatment. They should be attacked through an incision sufficiently large to permit of their removal intact, whenever this is at all feasible. Any attempt to remove a cyst through a small incision by first reducing its size by incision or puncture is to be condemned. No matter how carefully the field of operation be packed off, the extravasation of cyst contents into the peritoneal cavity is always a possibility and the result may, in time, be fatal. This has now been very generally recognized by gynecologists and the procedure practically abandoned by them. Unfortunately there are general surgeons who still resort to it. The advantages of a small incision over a large one are not for a moment to be weighed in the balance against the possibility of spreading a potentially malignant neoplasm. Of course there are cysts so huge that it is impossible to remove them intact; but such cases are very rare in these days.

The same objections which apply to the small abdominal incision apply with equal force to the vaginal route in the treatment of ovarian cysts. This route should be utterly abandoned except where cysts are so small and movable as to insure their removal intact. Indeed the increased manipulation necessitated by the vaginal technic greatly increases the chances of the unintentional rupture of even a small cyst. There are certain cases of ovarian cyst complicating pregnancy which form an exception to this rule, but they need receive no further consideration here.

Treatment by Roentgen rays or radioactive substances need be mentioned only to be condemned. Its most ardent supporters have admitted that its use in ovarian cystomata is both ineffectual and dangerous.

His conclusions are:

1. One-third of all proliferating ovarian tumors are frankly malignant, the other two-thirds are all potentially malignant.

2. The final estimation of malignancy must be clinical.

3. The usual method in which histologically benign tumors cause death is by perforation of the capsule, extravasation of contents, and peritoneal metastases.

4. Every ovarian tumor should be removed by laparotomy as soon as discovered, unless there be an absolute contraindication to operation.

5. Whenever at all feasible, cysts should be removed intact, without attempt at reduction in size by puncture.

6. When spontaneous rupture of a cyst has occurred, the earlier operation the better the prognosis.

7. In removing a unilateral ovarian cyst, other than one which is frankly malignant or one which shows extensive papillomatous changes, the other ovary should be left *in situ* if its macroscopic appearance be normal.

8. Every patient who has had a unilateral oophorectomy for cystadenoma should be subjected to a periodical reexamination for disease of the remaining ovary.

PROGNOSIS.—Dr. W. Hale White (*The Lancet*) obviously does not discuss the prognosis of every disease, but takes up a few of the commoner as follows:

Prognosis in Syphilis.—Syphilis has been much before the profession lately, and it has been shown that it is considerably more far-reaching in its effects than was formerly thought. If there were no syphilis there would be no tabes dorsalis and no general paralysis. Further, both these diseases may occur in children and be due to congenital syphilis, and some of the many mentally deficient children may owe their trouble to congenital syphilis. Then, although syphilis is not the only cause of atheroma, for atheromatous vessels are found in Egyptian mummies of about 1000 B. C., which is long before syphilis had been introduced into the old world, yet it is a cause for some cases of atheroma, and if you will have a Wassermann reaction done on all cases of atheroma of the aortic valves you will sometimes find it positive when there is no other evidence of syphilis. Without mentioning other results of syphilis it is clear that it is most important to try to foretell the outlook of this disease.

Now it used to be taught that if a patient had had two years' continuous treatment he might be regarded as cured, but we all often come across cases which show that this is cer-

tainly not always true, and the following figures from the "Medico-Actuarial Mortality Investigation" (Vol. iv., Part 1, 1914) support my contention:—

Class 1.—Syphilis Certain, Thoroughly Treated; 2 years' Continuous Treatment and 1 year's Freedom from Symptoms.

	Actual deaths.	Expected deaths.	Ratio* Per Cent.
Certain syphilis between 3 and 5 years prior to application	13	9.32	139
Between 5 and 10 years	34	19.56	174
More than 10 years	53	24.42	217

Class 2.—Not Thoroughly Treated or No Details Given.

Certain syphilis between 2 and 5 years prior to application	44	15.52	284
Between 5 and 10 years	54	25.52	212
More than 10 years	76	59.09	129

Class 3.—Doubtful Syphilis.

More than 2 years prior to application	67	48.71	138

*Being the ratio of actual and expected deaths.

All these persons, all men, were apart from their syphilis exceptionally good lives, for in spite of their syphilis they were accepted at standard rates; yet see what bad lives they were. The death-rate from tabes and general paralysis was five times the normal, and the death-rate from non-syphilitic diseases as pneumonia was also excessive. We see the same with the figures of the Gotha Insurance Company of Germany, for among 1,778 men who had undergone treatment for syphilis there were 487 actual deaths against 290 expected. I think you will agree with me that the prognosis of syphilis treated as it was till quite recently is worse than we commonly thought. These cases, however, remind us that for a long while it was taught that the outlook of tabes as regards amelioration was very gloomy. Now we know it is not so bad as this, for with a thorough course of mercurial inunctions or injections many tabetic symptoms lessen, and perhaps future investigations will show that they do better still if the mercurial treatment is preceded by salvarsan or by salvarsanised serum injected intrathecally. Since, too, we taught patients the importance of exercises the ataxia may lessen considerably.

Tuberculosis.—Everything points to the conclusion that the outlook for sufferers from tuberculosis is much better than it was. There has in this country been a steady fall in the mortality during the last 60 or 70 years, and apparently the rate of fall has not been altered by modern treatment; but, of course, it is possible that the rate might have been slower during the last few years if it had not been for treatment. All post-mortem room experience shows that healed tubercle is very common, and there is no case of phthisis so bad as to be quite hopeless. Even cases of long-continued suppuration from cavities or dilated tubes can occasionally be cured by the induction of an artificial pneumothorax, and I have a friend in whom the tuberculous process spread to the ribs, causing necrosis of some, his temperature was 106 F., and yet he recovered well enough to enjoy life and look after a small farm. The most fatal variety of tubercle is tuberculous meningitis, and fortunately that is one of the rarest complications of ordinary adult phthisis, but I know of two cases of undoubted tuberculous meningitis in children which recovered.

The most important thing to observe in trying to foretell the course of a case of phthisis is the state of the gastro-intestinal tract. Anorexia, vomiting, and diarrhœa are very bad signs, especially if persistent; indeed, loss of weight from any cause is bad. The most important instrument in a case of established phthisis is not a stethoscope but a weighing machine. But very bad as is the outlook of tuberculous intestinal ulceration even that may heal, for Mr. F. J. Steward once opened the abdomen of a patient of mine in whom six cured tuberculous ulcers of the intestine were found. The signs next in importance are those of general infection: for example, a persistently rapid pulse, continued pyrexia, and frequent profuse sweats are all bad, but it is surprising what a time some of these may persist and yet return to normal. These signs of general infection are of much greater importance than pulmonary signs; very few patients die from the local disease of the lungs, those that die do so because of the intensity of the general infection. Albuminuria and profound anæmia are unfavorable, and so is a strong family predisposition.

Of associated conditions diabetes, syphilis, and pregnancy very greatly increase the gravity of the outlook. As far as my experience goes I am much impressed with the extreme seriousness of either syphilis or pregnancy occurring in a person with active phthisis. I well remember a young man with active phthisis who acquired syphilis. The rapidity with which he went downhill after this was remarkable, but I have no evidence to show whether or not healed phthisis is relighted by syphilis. On the other hand, patients with pleurisy or emphysema often do well.

Many patients are brought to us because they have coughed up a little blood. The patient usually pleads that it comes from the throat, and sometimes he looks so well and his physical signs are so healthy that the doc-

tor comes to the same opinion, but this is always hazardous, for nearly always such blood means slight phthisis. Cases such as these often come before us for life insurance. The following results are interesting:—

	Actual deaths.	Expected deaths.	Ratio* Per Cent.
A. One hæmoptysis within 5 years of application.	46	30.41	151
B. One between 5 and 10 years prior to application	63	48.16	131
C. One or more hæmoptysis, last more than 10 years prior to application	223	219.6	102

Now these were all taken at normal rates, and therefore apart from the hæmoptysis were apparently exceptionally good lives, yet we see that really they were much under average lives. The deaths from tuberculosis of the lungs in Group A were five times the normal, in Group B three times, and in Group C twice. In connection with this it is interesting to notice that an actuarial investigation was made of 3,000 patients who had been in the Adirondack Sanatorium from 1885 to 1911. The mortality after the date of discharge from the sanatorium of those apparently cured was about twice the normal.

I have just mentioned that cases of phthisis accompanied by pleurisy often do well, and that I think is true; but at the same time a person who has had tubercle pleurisy cannot be considered normal, for he is liable to phthisis. Thus actuarial investigations show that the mortality of those who except for a history of pleurisy are healthy is above the normal rate, and that among those who have had pleurisy the death-rate from tuberculosis of the lungs is three times the normal.

Heart Disease.—It is strange that for many years several (although not all) physicians quite missed the most important factor in the prognosis of heart disease—namely, the state of the cardiac muscle—and concentrated their attention on the murmurs. The tale is told that the chaplain of one of the London hospitals had a loud murmur, and the medical staff reported that he could not live long with such a murmur. He was pensioned at his full salary and lived 40 years.

Generally speaking, the louder the murmur the better, for it means that owing to the vigor of the cardiac muscle the blood is being sent forcibly through the diseased valve. The loudest murmur I ever heard was audible to the unaided ear a yard from the foot of the bed. The patient sought relief because the noise of his murmur kept his wife awake. He was doing his work as a dock laborer. Another man with a loud murmur won a London to Brighton walking race. I knew a doctor with a loud murmur who worked and lived to be over 80. Soft murmurs indicate a feeble muscle; thus many a case of valvular disease has no murmurs on admission to the hospital, the muscle is too exhausted, but a murmur appears after the patient has rested in bed. The cases of mitral constriction with a loud crescendo murmur do well; the loudness of the murmur shows a strong auricle forcing the blood so strongly through the constricted auriculo-ventricular orifice as to compensate effectually for its narrowing. Then, too, we must remember that many of the weakest murmurs we hear are directly due to myocarditis, the weakened muscle allowing of dilatation of the auriculo-ventricular ring.

More than half the cases of heart disease are caused by acute rheumatism, the microorganism of which either directly or through its toxin affects chiefly the synovial membranes and the heart. To reach the heart, however, the poison must be carried there by the coronary vessels, and far more of it must reach the muscle than the valves or the pericardium; indeed, considering the fewness of the vessels in the valves, it is strange that they are affected at all, and putting aside malignant endocarditis the affection of them would hardly matter were it not that they pucker and so become inefficient. It is clear that the implication of the muscle is the most important. Indeed, it is by damage to the cardiac muscle by toxins that probably most people die; hence that invaluable rule of prognosis that a rapid pulse is a bad sign. We all know that a case of suppurative peritonitis is doing badly if the pulse is mounting in rate. Whether or not the pulse is mounting often determines whether an operation on the abdomen shall or shall not be performed; a rapid pulse is of bad omen in typhoid fever, pneumonia, phthisis, exophthalmic goitre, and indeed in any condition. In life insurance work the actual deaths of those with rapid pulses are double those which would be expected with healthy lives. The importance of the muscle being so great we shall be guided in our prognosis by the signs of diseased muscle—e.g., rapidity of the pulse, force of the apex beat, force of the pulse, signs of dilatation of the heart, and in hospital work the electrocardiograph is of help.

In passing we may note that an irregular pulse is not so often of bad prognostic significance as a rapid one. Probably because its very irregularity means—as in the case of extrasystoles—long pauses during which it can recover itself. Nevertheless, irregularity

is of some considerable importance, for Cowan tells us that out of 102 cases of mitral disease 31.4 per cent. died, but the deaths among those with regular rhythm were 20.5 per cent., with irregular 58.6 per cent. Among 58 cases of aortic disease 29.3 per cent. died; 25.6 per cent. of them had regular rhythm and 40 per cent. irregular. Of all irregularities that due to extrasystoles is by far the least important.

When a patient is lying in bed with recent rheumatic carditis we must keep him in bed, it may be weeks, so long as there is any clinical evidence that the affected muscle is undergoing repair, but if the murmur is valvular we do not need to keep him in bed till it has disappeared; indeed, we might keep him till his death if we were to wait for that. Nothing shows the skill of a doctor more than his management of heart cases. If he keeps them in bed too long he does irreparable harm, for the muscle gets feeble and flabby; if he keeps them in too short a time the prognosis is made bad because the raised blood pressure that follows exertion leads to dilatation of the heart if the muscle is weakened by unhealed carditis. When such a case gets up the ultimate prognosis will depend entirely upon the judgment with which we allow a little exercise so as to strengthen the heart, but not so much as to dilate it; for the first few weeks the doctor must frequently see his patient, increasing or decreasing the exercise day by day. All this can generally be done at home; if so, there is no need for places which lay themselves out for cardiac patients. We cannot leave the prognosis of heart disease without reminding you of the remarkable fact that rheumatic nodules are always associated with severe cardiac disease; we now know this because there are always similar nodules in the muscle substance of the heart.

Pneumonia.—Let us take another common disease—viz., lobar pneumonia—to illustrate some points in prognosis. A most important circumstance is the age. I took at random from my case-book 12 cases. Six were over 60; of these, 5 died without any complication. Six were young. The first was a girl, aged 15, who had such severe mania that Sir George Savage and I both thought she would die; she got perfectly well. The second, a lad with such severe pericarditis that his temperature was up for three weeks, got well. The third, a girl aged 15, who coughed up pus from an empyema following the pneumonia, got quite well; the fourth, a girl so ill that she was comatose, with a temperature of 105 F., got well; the fifth, a male aged 25, got double empyema after his pneumonia, but made a complete recovery; and the sixth, a young man with respirations of 108°, got quite well. Probably the next most important fact in the prognosis of pneumonia is whether the patient is alcoholic; those who have drunk heavily rarely recover. It is important to remember that it is not often the amount of lung that is involved that kills in pneumonia, as is shown by the fact that it is comparatively rare to see a patient with pneumonia dying livid, but pneumonia is chiefly fatal by the action of the toxin on the heart; a very rapid, feeble pulse of poor volume is always very serious.

Much can be learnt about the prognosis in pneumonia from the temperature chart. A high temperature—provided it is not so high, e.g., over 105°, as to be in itself dangerous—is a good sign. On the other hand, a low temperature—namely, under 100—is a bad sign, for it means that the patient is not reacting to the stimulation of the invasion by the pneumococcus. In the same way a striking leucocytosis indicating a good reaction is favorable—for example, in consecutive cases that got well the counts were 30,000, 27,000, 40,000, 28,000, 24,000.

As with so many diseases, so with pneumonia, the time at which the patient has the disease is important; thus, in some years the mortality is high, in others low. In 1895, when post-influenzal pneumonia was very rife, in some institutions the mortality shot up to the appalling figure of 64 per cent. If sufferers from pneumonia sleep badly they do badly as a rule, and if they sweat much apart from the crisis they do badly, probably because the sweating indicates severe infection.

Nephritis.—Turning now to the prognosis of nephritis. One of the most serious facts is the presence in the degenerative variety of albuminuric retinitis. Sufferers from chronic renal disease in whom this is present probably never recover. In one set of cases 85 per cent. of them were dead within the first year after the discovery of the degenerative retinitis, and 9 per cent. more died in the second year. On the other hand, inflammatory retinitis, best shown by optic neuritis, may be associated with acute nephritis, which gets well.

An important circumstance in the prognosis of chronic interstitial nephritis is the age of the patient. Young subjects with chronic granular kidney rarely if ever do well, and almost anyone under 30 who has it will soon die. Probably the cases in the first half of life are a different disease from the cases in middle life, for while people with interstitial nephritis in later middle life may die from cerebral hæmorrhage or pneumonia or vari-

ous conditions which are associated with granular kidney, those in the first half of life who have granular kidney almost invariably died soon of uræmia.

The sufferer from this disease who complains of general weakness does badly, so does the patient who is thin and pale, and if a patient takes to bed because of weakness he probably will not live long. Skin troubles, too, increase the seriousness of the outlook; the rare general dermatitis of Bright's disease usually kills, and very œdematous parts are liable to erythema or more severe inflammatory changes in the skin, and these are frequently fatal. Severe long-continued diarrhœa in Bright's disease, inasmuch as it points to some colitis or enterocolitis, is of very dangerous prognosis. To estimate the outlook when the patient is definitely uræmic is very difficult, but, speaking generally, the more severe the symptoms of uræmia the worse the prognosis. When the patient has a cerebral hæmorrhage the outlook is by no means necessarily fatal. The public have a saying that the third stroke is fatal. The following point to a fatal result: (*a*) Coma still present at the end of 24 hours; (*b*) Cheyne-Stokes breathing as a result of the hæmorrhage; (*c*) much mucus in the lungs; (*d*) paralysis of all four limbs; (*e*) a very low temperature; and (*f*) a very high temperature. Pneumonia, pleurisy, peritonitis, and pericarditis all greatly increase the gravity of the outlook. Suppression of urine is of most serious importance. The actual amount of albumin is not of much value in prognosis, but an increase in the amount is of bad augury, a lessening is of good. The normal amount of urea in the blood is 0.3 per cent.; anything over 1.0 per cent. shows that uræmia is likely, in which condition we may get a reading as high as 3 per cent.

Diabetes.—Diabetes is a disease of great interest from many points of view, and not least from that of prognosis. In the first place it is a racial disease, being terribly common among the natives of India, and at the present time the frequency of death from diabetes in the East is so serious that the Government have sent out a member of our profession to investigate the subject. Then, too, we have the well-known fact that it is commoner in Jews than Christians.

Quite apart from race, however, it is a family disease. Thus Otto May, investigating 76,333 deaths at the Prudential Assurance Company, found 1,143 were from diabetes. The family histories of these showed a death from diabetes in 41—i. e., 3.6 per cent. A control investigation of 1,143 other cases picked out at random from the same period gave a family history of diabetes in only 12—i.e., 1.05 per cent. A further study of his figures shows that diabetes includes at least two different groups of cases: (1) a group in which the incidence is in middle or late life, the disease comparatively mild, and the family factor absent and (2) a group characterized by earlier incidence, more rapid termination, and a tendency to run in particular families. This affects our discussion of prognosis, for if there be a strong family history the sufferer from diabetes will probably die rapidly and before he attains middle life. Further, it appears that the hereditary factor comes out more in the male—that the death from diabetes of a father or brother is more ominous than that of a mother or sister, and that the male is more liable to suffer from family diabetes than the female. The distinction that these investigations show as to two kinds of glycosuria according to age are well known. I often wonder if the passage of a little sugar by an elderly person matters. We all know the elderly persons, men especially, whose sugar is easily controlled by diet; usually they pass no diacetic acid and have few of the symptoms of diabetes. Indeed, it is highly probable that a number of elderly men have a little glycosuria, but they go to their grave without its ever having been suspected and as far as we know without its ever having done them any harm.

I would suggest that the most important thing about the prognosis of diabetes is the effect of treatment; it is impossible to know beforehand whether a patient is going to respond easily to this. The other important thing is whether the sufferer is able to live in easy and comfortable circumstances. No doubt if diabetics are well off the ease with which they can buy suitable food is greatly in their favor, but of almost equal importance is the fact that they can give up their work and lead a quiet life. Worry is a powerful factor in precipitating diabetic coma. I know middle-aged persons who have had diabetes for 20 years and whose urine always contains some sugar and often a little diacetic acid, but then they have always been very careful to carry out the treatment ordered and to live quietly. A member of our own profession always gets considerable glycosuria when working hard, but when he takes a long holiday it always diminishes considerably and often disappears altogether.

Those who are occasionally a little drowsy must always be on their guard, but if large

doses of bicarbonate of soda are given the drowsiness may entirely pass away; but, on the other hand, I doubt if persons ever recover from real coma, although alkalies may prolong life a little. Lately Dr. E. P. Poulton and others have shown that during the dyspnœa which so often precedes, and always accompanies, diabetic coma there is a considerable diminution in the CO_2 in the alveolar air. The explanation is that the blood being more acid than normal in those who are going to have diabetic coma, the increased acidity exciting the respiratory center leads to deeper respiration and consequent washing out of CO_2, from the alveolar air, and an apparatus has been devised for easily measuring the CO_2, in the alveolar air. I have a strong suspicion that if lipæmia is very marked the outlook is bad. I need hardly remind you that gangrene, phthisis, and almost any severe illness increase the gravity of the outlook in diabetes, but it is of interest to remember that pyrexia sometimes increases the sugar and sometimes leads to its disappearance, and operations have the same variable result.

Some General Factors in Prognosis.—There is another aspect of the prognosis question and it is this: that we cannot possibly tell whether a treatment is good or bad unless we know what is the natural course of the disease. Over and over again good results are ascribed to treatment quite unjustly; the patient has got well because in the natural course of the disease he would do so, treatment has had nothing to do with it. [The lecturer here gave results already published of the natural course of the disease in those who suffer from gall-stones and those who suffer from exophthalmic goitre.]

In trying to estimate the prognosis in any disease we have not only to think of the natural course of the disease but the kind of patient who is afflicted by it. Time will only permit us to take three instances of this. One circumstance that makes a patient a bad life is excessive weight. The actuarial research to which I have already referred has constructed a table:—

	Ratio of actual to expected deaths.
Average normal weight	98 per cent.
From 5 to 15 per cent. overweight....	114 per cent.
From 15 to 25 per cent. overweight....	129 per cent.
From 25 to 35 per cent. overweight....	136 per cent.
From 35 to 50 per cent. overweight....	165 per cent.
More than 50 per cent. overweight....	228 per cent.

Further, a study of the figures clearly shows that the mortality increases in proportion as the abdominal girth over that of the expanded chest increases; thus the expectation of life of a man who is 50 per cent. overweight and whose abdominal girth exceeds that of the chest by more than 3 inches is very bad. Among heavy people the death-rate from diabetes, apoplexy, heart disease, pneumonia, and Bright's disease was very high, while from tuberculosis it was very much lower than normal, and generally speaking the greater the weight the lower the mortality from phthisis. It must be remembered that the figures just given understate the case, for all the people from whom the figures are drawn were taken at standard rates, and as they were heavy a rigid selection was made so that only those which appeared exceptionally healthy were insured.

It is well known that over-indulgence in alcohol greatly damages prognosis in any disease. The following ratio shows that alcoholic subjects are bad lives, as when there was one alcoholic excess or more, the last within two years of application, the ratio of actual to expected deaths was 174 per cent. Here again the case is understated, for these figures refer to lives apparently so exceptionally good that they were taken at ordinary rates in spite of the history of alcoholic excess.

Lastly, there is the mental factor. Every doctor dislikes the patient with an acute illness who is sure he will die, and likes the patient who is certain he will recover. A boy said he knew he would die as a result of an anæsthetic necessary for an operation, and he did before the operation was begun, although the anæsthetic was given by a highly skilled anæsthetist.

MANY acute observers agree that it is those who watch the new dances and do not dance themselves who are erotically affected, rather than the dancers. We have long suspected the peculiar vehemence with which the dances and dancers are denounced by certain righteous folk to be invested with much significance. The language employed by these outraged gentlemen in characterizing modern dancing has a rich suggestiveness, from the Freudian standpoint. Repressed erotic ideas surge and strain plainly in these verbal outbursts. What devils our religious leaders would be were they to break out and lead the dance? We very much fear that if they threw their repressions to the winds that what now appalls them so greatly would pale into insignificance in comparison with their performances.—A. C. J. in *Medical Times.*

Menorrhagia due to retroflexion can be corrected by reposition of the uterus to its normal position. This is best done by the use of a Hodge or Smith pessary.

EXOPHTHALMIC GOITRE AND DIABETES.

Dr. Paul Sainton (*Monthly Cyclopedia and Bulletin*) together with Dr. Paul Gastaud have met with three instances of diabetes among ninety cases of exophthalmic goiter, and after an extensive search in literature have found altogether 60 cases presenting this combination of conditions. They estimate the frequency of diabetes in exophthalmic goiter as 3 in 100 cases. It is undoubtedly a fact that diabetes occurs much oftener in cases of hyperthyroidism than among patients with hypothyroidism, in which it is quite rare as Parisot has shown.

Clinically, diabetes occurring in the course of Graves's disease is manifested in two ways viz.: (1) as a temporary or slight glycosuria, with the usual symptoms of diabetes only present in a trifling degree; (2) as a well-established condition, with all the characteristic symptoms present, the latter frequenly even dominating the clinical picture as a whole. In the first group of cases slight thirst, or a slight increase in appetite, or a feeling of weakness is at times responsible for the examination of the urine which leads to the discovery of the glycosuria. The amount of sugar excreted may be small, e.g., 3.4 to 5 gm. in one of the author's cases with a total daily urinary output of 1500 c.c. In the second class of cases, on the other hand, the diabetic disorder is unusually severe, 8 to 14 liters being sometimes excreted daily, and the amount of sugar eliminated ranging from 340 to 1000 gm. a day, or even attaining higher figures, such as are hardly met with in any cases other than those of pituitary diabetes. Polyphagia, polydipsia, and other symptoms are pronounced. It seems to be a uniform rule that in severe cases of Basedow's disease severe diabetes exists, while in mild Basedow cases slight and evanescent glycosuria occurs. In most cases diabetes appears as an epiphenomenon in the course of exophthalmic goiter, and a long time after its onset. Where both conditions have become established, a state of equilibrium seems to occur between them, viz.: when the Basedow condition becomes worse the diabetes improves, and vice versa. The prognosis varies in different cases. Mild diabetes in Basedow cases runs a course quite like that of arthritic diabetes, presenting the same intermissions and low degree of intensity. In severe forms, on the other hand, the combination of the two diseases constitutes a condition of exceptional gravity. In the series of cases collected by Sattler, 25 patients rapidly succumbed—7 of them in coma. Sometimes, as in one of the author's own observations, pulmonary tuberculosis is superadded, further aggravating the prognosis and hastening death.

The combination of diabetes and exophthalmic goiter may be complicated by other syndromes, as in the cases reported by Lancereaux, Henrot, and Murray, in which acromegaly was added to form a triad of conditions. In a case of Rennie the third component of the trial was myasthenia gravis. In one of the author's own cases myopathic and osseous disorders, the latter of the type of Paget's disease, rendered the interpretation of the symptoms singularly difficult. In diabetic Basedow cases of the female sex signs of ovarian insufficiency are at times noted; in one patient the menstrual period was clearly instrumental in causing glycosuria either to reappear or to become more marked.

On the whole, the association of Basedow's disease and diabetes cannot be considered a fortuitous phenomenon. That a bond of some kind unites the two conditions can readily be shown. Their mutual relationship is brought to light when one sees exophthalmic goiter and diabetes alternate in the different members of the same family. Manby has reported 3 striking instances of this. In one family, the father and brother of a Basedow patient are diabetic; in a second, the sister of a Basedow patient is diabetic, and her brother's two children have been carried off by acute diabetes. In the third instance, the two sisters of a Basedow patient succumbed to diabetes at the ages of 9 and 10, respectively. In a case of Pibrane and in one of the author's the father of the Basedow patient was diabetic. Finally, in still another case the patient's aunt had diabetes and her cousin exophthalmic goiter. The inverse relationship in the severity of the two disorders in the same individual already referred to, is evidence in favor of their mutual dependence.

What is the mechanism of this diabeto-Basedow syndrome? Pathology as yet yields only incomplete testimony in this connection. A systematic study of the ductless glands in such a case has never been conducted. The lesions mentioned as having been found have been as follows: (1) In several cases the liver showed slight fatty changes; (2) the condition of the pancreas varies; in Murray's case it showed marked sclerosis and disappearance of the islets of Langerhans, while in those of Sougues and Marinesco and of Lepine it appeared normal. In the observations of Henrot and Murray, where acromegaly was superadded, the pituitary was enlarged; in the others its condition was not noted.

In spite of the lack of evidence, the pathologic physiology of Basedowian diabetes can be at least tentatively conceived. Glycosuria of thyroid, adrenal, and putuitary origin are known to occur, though their precise relationships to the pancreatohepatic apparatus cannot be stated. The first thought coming to mind upon seeing diabetes appear in a case of exophthalmic goiter is that it is dependent on the excessive thyroid functioning. The following facts are in favor of this idea: Clinically thyroidism brought on by thyroid feeding has been observed to induce glycosuria in a number of subjects whether myxedematous (cases of Beclere and Ewald) or obese (cases of Notthaft and von Noorden). Basedow symptoms and glycosuria even appeared simultaneouly in Notthaft's case following the ingestion of thyroid gland. In the period when patients with exophthalmic goiter were treated with thyroid gland, temporary glycosuria was not infrequently observed. Even, at times, there supervened a full-fledged diabetes, as F. Muller reports, his patient having died in coma. Thyroid treatment thus brings about intolerance of carbohydrates, at least in a certain category of individuals (obese, myxedematous, and with exophthalmic goiter). In healthy human subjects and in the lower animals attempts have been made to demonstrate this intolerance by the test of alimentary glycosuria; likewise in Basedow cases. The results,

however, have been contradictory. In the animals they were inconstant. Among 20 normal human subjects Bettmann noted prompt passage of the sugar into the urine 11 times, while Strauss and Marwin observed it only in barely 5 per cent of the cases. Among Basedow cases, whereas Krauss, Chvostek and Hirschl and von Noorden found the test positive in half their cases, Dienot, Goldschmidt, Strauss, Rathery, and the authors observed this less frequently—at most in about 15 per cent of the cases. Likewise in favor of the thyroid theory are the lesions of this gland noted by Carnot and Rathery in diabetics and the improvement reported by Lorand in cases of diabetes upon administration of sera from thyroidectomized animals.

Summarizing the above facts, the conclusion cannot be escaped that the participation of hyperthyroidism in the production of diabetes is extremely probable.

Other glandular theories may, however, be put forth, and these must be passed in review. Among them is the adrenal theory. Cases in point are uncommon, and the authors know of but one instance in which a patient afflicted with both exophthalmic goiter and Addison's disease showed temporary glycosuria (personal case). Discussion of the possibility of participation of the adrenals in such a glycosuria is rendered necessary by the fact that the Vienna school, Eppinger, Falta, and Rudinger: Eppinger and Hess; Krauss and Friedenthal; Asher) maintains the thyroidoadrenal origin of exophthalmic goiter. This theory is based on the relations supposed to exist between the thyroid, pancreas, and chromaffin system. In hyperthyroidism there would occur inhibition of the pancreas and stimulation of the adrenal function. The theory offers a plausible explanation of the clinical association in question, it being merely necessary to conceive that, by reason of the pancreatic and thyroidoadrenal antagonism, the disturbance of pancreatic and thyroidoadrenal antagonism, the disturbance of pancreatic function might extend to complete suppression of glycogenesis. This theory is widely discussed. It has not been proved, indeed, that an increase of adrenal secretion takes place in Basedow's disease; epinephrin is not constantly present in such cases; finally, the association of hyperthyroidism with Addison's disease is hardly in favor of this conception. Basedow cases, moreover, do not show any constant change in the blood-pressure. True, Asher has noticed that in certain subjects with thyrotoxicosis the injection of ¼ to ½ mg. of epinephrin leads to glycosuria. Further investigation is required, however, to confirm the validity of this test. Thus, on the whole, it is difficult to establish the responsibility of the adrenals in the production of diabetes among Basedow cases.

Such is not the case, however, when one looks up a possible role of the pituitary in this direction. The reported cases of coincident exophthalmic goiter, acromegaly, and diabetes afford firm support for this theory. Even clinically, there is a marked resemblance between the severe Basedowian diabetes cases and cases of pituitary diabetes. Pituitary diabetes may show itself in the absence of acromegaly. All authors are agreed that it is due to hyperpituitarism. Claude and Baudoin, in a series of researches, found that in a certain proportion of subjects—arthritic and obese cases—after meal-time alone, glycosuria appeared after the injection of pituitary extract. Comparison of these cases with those of glycosuria following thyroid treatment in obesity is of interest in this connection. Clinically and experimentally, there is thus a considerable analogy between Basedowian diabetes and glycosuria, on the one hand, and pituitary diabetes and glycosuria, on the other.

From the above it seems justifiable to assume that in diabetes coupled with exophthalmic goiter two internally secreting glands may be tentatively held responsible, viz., the thyroid and the pituitary. Can one conceive that these two influences are simultaneously operative in the production of Basedowian diabetes? Such a combination seems not unlikely, in view of the close functional synergism existing between the two organs named. As for the more precise mechanism of the glycolytic process taking place the question arises whether the hypophysis and thyroid cause, through insufficiency in their functions some disturbance in virtue of which the sugar is no longer retained in the liver. If they act through the pancreas is this action exerted through the intermediation of the sympathetic system or through a hormone? These are further problems in general pathologic physiology which the association of diabetes with exophthalmic goiter brings up for future solution.

"INDIGESTION" A FORERUNNER OF DISEASES OF THE CARDIO-VASCULAR AND RENAL SYSTEMS.

Dr. Fred M. Hodges (Southern Medical Journal) writes a paper on this subject, and states that in the study of any condition where almost every known malady is laid at its door it is naturally very hard to draw any conclusions, but in trying to determine the importance of the so-called autotoxemias, constipation and indigestion, as forerunners of cardio-vascular and renal disease, the present study of cases herein enumerated would seem to indicate:

1. That indigestion and constipation may in a small percentage of cases be the only impairment and forerunner of disease of the cardio-vascular and renal systems, and this is of special significance where there is a family history of cardio-vascular disease.
2. That careful urinalysis and the sphygmomanometer are usually the first methods of examination to exclude the cases later showing cardio-vascular and renal changes.
3. That routine examinations for indican should be made in all cases of chronic constipation and indigestion, and especially those showing low blood pressure readings.
4. That patients about forty years old and above, with heavy responsibilities and about the 20 per cent maximum weight and over, make up the majority of the first group.
5. That whatever may be determined to be the actual cause of indicanuria, from these cases, it does not seem to be a prominent factor as a forerunner of cardio-vascular and renal disease, but is found in a certain percentage of cases in association with low blood pressure.

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RHEUMATISM.

Inheritance is a factor in twenty per cent of cases. Exposure to wet and cold, damp air; overwork, either mental or physical; defective digestion, with constipation which induces autointoxication, thus poisoning the blood, affording a nidus for microorganisms. Exposure to cold and wet lowers the vitality and depresses the system, which predisposes to an attack of the inflammatory form of rheumatism.

While microorganisms are present in the blood, yet there should be an exciting cause for their activity. Haig says the bad effects of constipation result in the absorption of acid from the large intestines; raises the acidity of the urine and diminishes the alkalinity of the blood so that it brings about an accumulation of uric acid in the body and accounts for its precipitation into the joints in acute rheumatism. Many joints may be affected at the same time, or in succession. It shifts from part to part, frequently in the space of a few hours and in parts remote from each other.

Inflammatory rheumatism is accompanied by fever, profuse acrid perspiration of a peculiarly acid odor, and the presence of large quantities of uric acid passing through the kidneys.

As to treatment there is no specific single remedy. The successful management is to prevent injury, or involvement of organic disease which may result from it. The patient must be relieved of pain, protected against cold; and action of the skin, bowels and kidneys encouraged.

Time, and good nursing, with an eliminative treatment may run a case through in two weeks, or in twenty-one days; but a treatment which has been highly efficacious in one case may be entirely unsatisfactory in another. The patient's condition, as to fever, pain and inflammation of the joints, and his peculiarity of temperament and constitution as well as the severity of the attack, will determine the best line of treatment to adopt.

In spite of serum treatment, or any alkaline and anodyne remedies, with local applications, the cases go on, from twenty-one days to six weeks. The most important thing is to watch the heart, the pleura and the kidneys. There is always danger, if a patient becomes fatigued and exposed, of involvement of some organs of the body following acute rheumatism.

D. L. F.

THE ETIOLOGY AND VACCINE TREATMENT OF HODGKIN'S DISEASE.

Billings and Rosenow (Jour. Amer. Med. Assn. LXI, 1913) confirm the findings of Bunting and Yates and of Negri and Mieremet, who described a bacillus that they cultivated successfully from the lymph nodes in Hodgkin's disease. Billings and Rosenow were able to isolate such a bacillus from the lymph nodes in 12 cases of Hodgkin's disease. They treated these cases with autogenous vaccines except in one patient who received the vaccine prepared from other patients. The vaccine was first given in the dose of from 5,000,000 to 10,000,000 and gradually increased to a maximum of 100,000,000. The vaccine was injected subcutaneously and repeated every five to seven days. They have not used it intravenously but have given that method consideration in obstinate and extreme conditions. In febrile cases the second or third dose has been associated with a reaction con-

sisting of a rise in temperature, rapid pulse and general weakness and discomfort. In non-febrile patients only slight general reaction may occur with a rise of one or two degrees in temperature, slight general muscular pain and debility.

In addition to the vaccine treatment they used Roentgen rays in the majority of cases treated. The authors state that in six of the patients there was a uniform and relatively rapid decrease in the size of the lymph nodes, one of these without Roentgen treatment. One patient treated with vaccine alone who had very large lymph nodes, very enlarged spleen and high temperature, had a violent general reaction with the third dose, then became afebrile and the swelling of the lymph nodes and the splenomegaly rapidly diminished.

Two of the series died: one with marked enlargement of the mediastinal lymph nodes who died after the third vaccination, and the other, also with the same condition, died after one autegenous vaccination.

PATHOLOGY OF QUINCKE'S OEDEMA.

The investigations of P. Neuda (Wiener medizinische Gesellschaft, June, 1914,) comprise 5 cases. There are three cardinal symptoms (1) splenic enlargement, (2) urobilinuria (and albuminuria which is not so constant) and (3) the haemoglobin content and color index immediately before and during the onset. The haemoglobin content rises before the onset rises to 95, 97, 100, 109 and after the onset it reaches 111 and even 117 with the same count of erythrocytes. The color index before the onset is 0.98 or 1.0; after the onset it rises to 1.3, 1.4. The variations in the number of the red cells before the onset sometimes consist of a reduction, sometimes in an increase.

Investigating these symptoms the author found that the splenic enlargement exerted a great influence upon the disturbances in the blood. In regard to the urobilinuria he believes that it has to do with an haemolytic phenomenon and could be explained on an insufficiency of the hepatic cells due to an increased production of bilirubin-forming material from the increased blood destruction. The third cardinal symptom also allows of explanation on the haemolytic basis. The reduction in the number of the red cells signifies their destruction in the spleen; the increase signifies the compensation from the bone marrow. Neuda cannot explain the rise in the haemoglobin content and in the color index. All three symptoms point to an haemolytic condition.

A very interesting and important point is the determination of the resistance of the erythrocytes. The minimal resistance before the onset was rather slight, 0.54; during the onset it was 0.42, i. e., increased. The maximal resistance before was strikingly high, 0.1, while during the onset it fell to 0.34, from which Neuda concludes that in the onset the most resistant erythrocytes are destroyed because of the haemolysis. But why the most resistant rather than the least resistant?

The characteristic of Quincke's disease, the acute circumscribed swelling, Neuda explains on the basis of an hydraemia to which the dryness of the mouth, the thirst, the reduction in the amount of the excretions tend to point. The change in the osmotic pressure in the vessels perhaps is a factor and as the resistance of the tissues which is a *punctum minoris resistentiae* brings into expression the general transudative diathesis. Exogenous factors such as trauma or pressure play a very important role. The author observed a chlorid retention before the onset. The acute circumscribed oedema seems to the author to be a sympton of the noxious haemolytic phenomenon which beginning in the spleen is continued in the liver. The acute circumscribed oedema may, however, result from changes in the osmotic pressure of the tissue and vessels through a haemoglobin derivative in which exogenous factors, such as pressure, play an important part.

SIGNIFICANCE OF SUGAR TESTS IN THE DETERMINATION OF HEPATIC FUNCTION.

F. Wagner (Zeitschrift f. klin. Medizin, Bd. 80, 1914). For the determination of hepatic function the patient is given 40 g. galactose and its elimination in the urine determined hourly. The galactose is identified by the estimation of its melting point. In most cases an investigation with 100 g. levulose, and in some cases also with dextrose, was also carried out. It was shown that in most cases the utmost limit of elimination normally was 1. g. galactose, and if by repeated examination more than 1. g. was eliminated a pathological condition of the liver could be diagnosed.

In catarrhal icterus the experiments showed a constant, considerable galactosuria which persisted longer than the other subjective and objective symptoms. The levulose experiments were not identically constant. In

obstructive icterus, on the contrary, in most of the cases, there seemed to be a normal tolerance to galactose. Biliary obstruction caused no diminution of the galactose tolerance. Tumors and metastasis caused an increased galactosuria only when the process was very extensive.

In 2 cases of lead poisoning the galactosuria was positive. In cirrhosis galactosuria is uncertain—a positive or a negative result does not speak for or against the diagnosis. In hepatic obstruction the test was always negative. In liver syphilis the test was variable. In cholelithiasis, perihepatitis, and simple fatty liver a diminution to galatose tolerance could never be found. A positive test in uncertain cases is always suspicious of a diffuse hepatitis.

In Basedow's disease there was usually a positive galactose test. In feverish patients without any liver affection there was always normal tolerance to galactose. A positive test points to a disturbance of hepatic function. The levulose test is not so reliable as the galactose test. No relations could be determined between alimentary extrosuria and hepatic lesions.

TREATMENT OF DIABETES INSIPIDUS.

Hoppe-Seyler (Medizinische Gesellschaft zu Kiel, May 14, 1914) believes that diabetes insipidus is a phenomenon of hypophyseal disturbance. In the case reported by him injections of pituitrin succeeded in reducing the diuresis to normal quantity and increasing the concentration of the urine. Perspiration which before was absent was increased also. Previous treatment with atropin, while it diminished the diuresis produced no effect upon the specific gravity of the urine or upon the excessive thirst, but caused, on the contrary, a water logging of the body and uremic symptoms. Hence, Hoppe- Seyler concludes that pituitrin works in a specific manner in diabetes insipidus which speaks for a disturbance of function of the hypophysis.

VACCINATION AGAINST TYPHOID FEVER.

The use of a typhoid vaccine, says a writer in the *Dietetic & Hygienic Gazette* recently, will prevent this disease. In war typhoid fever has ever been far deadlier than the enemies' weapons; but the vaccinating of soldiers against it has rendered them almost entirely immune. German and English military camps have become practically free of typhoid fever; and this is becoming so in ours, now that vaccination is compulsory among regular American troops. This fever is contracted only through whatever is taken—food and drink—into our mouths. It is mostly a water borne infection, and next should be vaccinated against typhoid. They may not only themselves get typhoid; but they may also become 'typhoid carriers," introducing the germ into communities hitherto exempt. Indeed, there are carriers and distributers of the germ who are not infrequently milk borne. When the anti-typhoid inoculations are made in the afternoon all untoward sensations are likely to have disappeared by the following noon; successive inoculations are made a week apart. Especially should they be submitted to by traveling business men, who may in the most insidious ways contract typhoid. Here is peculiarly a disease of youth and early manhood and womanhood. It would be well for those young men and women who go to college and boarding school to submit to this preventive measure before leaving home. Tourists and vacationists themselves suffered the disease of which it is the essential and specific cause. It is considered that the protection is effective for two years and that the one inoculation may indeed afford complete immunity for many years, if not for life.

SUMMER SNEEZES.

According to a writer in the *Dietetic and Hygienic Gazette,* "We have colds all the year round—winter colds, the 'cub gedle Sprig' kind, summer colds and hay fever. The temperature of the air has very little to do with catching cold except as it lowers the bodily resistance. And extreme heat can do that as well as cold can. In the summer the change may be great within a few hours; it has been ninety in the morning and near freezing toward evening. The predisposed condition of the body plus germs are what result in colds. At sea or by the seashore one seldom catches cold. Arctic explorers never catch cold while they are at or near the Poles; but they are as likely as anybody to do so when they return to civilization, where the germs are. The cold air treatment is the ideal one for consumptives, who get well more surely in the winter than in the summer time. The common cold is usually an infection—that is, the germs from a sneezing, spitting, coughing victim are distributed through the air, or by the dust-laden breezes; and predisposed (run down) people breathe them in and then "catch cold." Summer colds are the meanest of all

because they make you and everyone else so uncomfortable, and are so hard to get rid of. People are sympathetic when you have a winter cold; in summer they are resentful because you are making what seems to be an unreasonable nuisance of yourself. You begin with sneezing; your nose is stopped up and you speak thick; headache, chill and fever follow; then pains in the back, heaviness in the bones, and that tired feeling—all of which, being interpreted, means that the germs are having a hot old time throughout your internal relations. If you feel this way make an anchorite of yourself until your snuffles are over. Why? Good old Ben Franklin could have told you why a century and a half ago; he sensed that people caught colds from one another—that germs play their parts in most colds, although he could not see the germs under the miscroscope as we do today."

NEW BOOKS

Nervous and Mental Diseases.

For Students and Practitioners. By Charles S. Potts, M. D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia. New (third) edition, enlarged and thoroughly revised. In one 12mo volume of 610 pages, with 141 engravings and 6 full-page plates. Price, cloth, $2.75, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

In this, the third edition of his manual, the author, Dr. Charles S. Potts, has made every effort to bring the work up to date, and it will continue to serve as a guide for the practitioner and student. The chapter on general symptomatology and methods of examination has been amplified. A change noted is that dementia paralytica is now included in the chapter devoted to diseases of the brain and cord, whereas formerly it had been classified under mental diseases. Just as might be expected, the author devotes considerable space to a description of the cerebrospinal fluid in syphilis, together with the methods of examining the fluid.

Whilst it has always been the reproach of neurology that the therapeutic measures of this department are conspicuous through the indifferent results to be expected, yet the author has made this one of the most valuable parts of his book.

Medical Men and the Law.

A Modern Treatise on the Legal Rights, Duties and Liabilities of Physicians and Surgeons. By Hugh Emmett Culbertson, Esq., member of the Ohio and New York Bars; Contributing Editor to many legal publications. Octavo, 325 pages. Cloth, $3.00, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

Hugh E. Culbertson, of the Ohio and New York bars, in this book touches upon "all the main features in the modern law pertaining to physicians and surgeons."

The author's historical sketch of the profession's status presents some very interesting facts. Thus, from even the remotest periods, the practice of medicine has been under the law's regulation. In England up to 1163 the practice of medicine and surgery was almost entirely controlled by the monks. In this year the Council of Tours separated surgery from medicine, restricting the function of the monk solely to the administration of drugs.

Interesting as this historical sketch is, the feature of this book that makes it of value to the physician is its clear-cut definition of the physician's obligations and rights in the law. It is a curious fact, but nevertheless true, that even many physicians lack a clear understanding of these points.

A definite advantage to be noted in this book is its simplicity of style. It is unmistakably a fact that when a legal writer sets out to do so, he can make himself almost unintelligible to the average reader. The author has borne in mind this failing of the average professional writer to burden his writings with a phraseology belonging distinctively to his profession, and has succeeded in preparing a work easily read and understood. It is entitled to a place in every medical man's library.

Life and Law.

The Development and Exercise of the Sex Function, together with a Study of the Effect of Certain Natural and Human Laws, and a Consideration of the Hygiene of Sex. By Maude Glasgow, M. D. G. P. Putnam's Sons, New York and London, 1914. Cloth, $1.25.

Under this title Dr. Maude Glasgow gives us a little book on the ever popular theme of sexual relations. The book is elementary and probably written for lay readers. The suffragist will find much in Life and Law to sustain her in her demands for the ballot—the old maid again will learn that men are horrid brutes and that she has escaped much of man's brutality by remaining single.

Life and Law is an insipid little book suitable for the ladies of the sewing circle.

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TREATMENT OF SCARLET FEVER

By I. L. VAN ZANDT, M. D., Fort Worth, Texas.

"Look, Doctor, it goes in like penetrating oil," were the words of Mrs. George, to whom I had a few minutes before given some Unguentum Crede, to be rubbed into the back of her daughter, about 8 years old, who had been sick some days with scarlet fever. The eruption was quite profuse, her back as red as the proverbial lobster, the glands under the angles of the jaws inflamed, and the tissues very much swollen. I looked and for a moment it seemed I could see the black ointment fading from, or into, the skin. I noticed also that the skin as far as touched was absolutely blanched, the redness having entirely gone out of it. This was my first use of Unguentum Crede' (a fifteen per cent ointment of Collargolum) in scarlet fever.

I went back the next day and found the patient very much improved, the fever about gone and the swelling very much reduced. The mother said the change began about six hours after the ointment was rubbed in. This was about May 1, 1899.

A short time after, I saw another little girl with a very sore throat from scarlet fever. I made several prescriptions without benefit, then prescribed Ung. Crede', with the understanding that I was to be called the next day if she was no better. The next visit was not made.

I then concluded that if Ung. Crede' could cure these sore throats of scarlet fever, it ought to prevent them, and hence I adopted it as my first treatment in all cases of scarlet fever.

This was fifteen years ago, and in the interval I have never, where I had the case from the beginning, had a single inflamed ear, and only one suppurating gland, that in a nine or ten months old baby, which already had a "running ear". I have, however, assisted in the treatment of some of these cases which had been given other treatment by others. In all a prompt betterment occurred when my treatment was adopted.

Hence, I am emboldened on the basis of fifteen years' experience, to say that *properly used* COLLARGOLUM IS AS SURELY A SPECIFIC FOR SCARLET FEVER AS IS ANTITOXIN IN DIPHTHERIA.

I know that some of my friends have used it without getting results such as mine, but when I hear of this, I feel sure that the technique of giving was defective, for though I have generally been reputed to be a modest man, I am not modest enough to assume that I have not had in fifteen years what would have been a bad case but for the treatment, while my neighbors have been losing cases, and furnishing in others, work for the aurist.

We all recognize that quinine is good for "malarial" chills, and yet if twenty grains is necessary for a given case and only five is given, or, if twenty is given and vomited, or if twenty is given by injection into the bowel and immediately passed, we do not say that quinine is not good for chills, but we put the blame on the failure in administration.

So a failure to get the collargolum into the blood is, I think, responsible for these failures of others.

I will illustrate this with the experience of a young physician, a friend of mine, whom I love and esteem most highly as a man and a physician. He is a Johns Hopkins man who stood very high, I think first, in his class, and then spent a year in the hospital after his graduation.

Soon after he began private practice, he treated a case of scarlet fever with collargolum, and had both suppurating glands and ear trouble. I know nothing of his technique in this case.

Later, I saw with him a patient who had a lacerated and contused wound of the scalp, which had become, or most likely was septic from the beginning. I saw him at the end of four days. The wound was discharging pus, the face was red and swollen, the eyes almost closed, and lymphatic glands down to clavicle

showing infection. Temperature 102 or 102½ at 9 A. M. He had had no rest since the wound occurred.

The doctor pointed to the stain on his shirt where the ointment had been rubbed under the arm.

At my suggestion, the hair was cut away from an inch or more around the wound, this area covered with Unguentum Crede, this covered with gutta percha tissue, then gauze or cotton and retained by a bandage.

The bowel was then washed out and twelve grains of collargolum in a teacup of warm water given by enema, the same to be repeated at bedtime. The next morning, he reported that he had had a good night's rest, the first since the injury, and was feeling fine. Temperature 101. By the next morning, forty-eight hours from the time the collargolum treatment was begun, his fever was all gone and he was ready for a hearty breakfast. Two or three days later, *without any rise of fever there developed an abscess under a deeper layer of the scalp, about four inches in diameter.* Some necrotic tissue being taken out of the bottom of the wound, the pus was discharged, and a rapid recovery ensued.

A few months ago, the doctor told me that his little girl of four had scarlet fever, and asked what to do. I told him to have the Ung. Crede' rubbed in freely. The next day he phoned, asking me to come to see her, as she still had 103 temperature.

I went and found that on account of the child objecting, the rubbing had not been done, but the ointment had been pretty extensively smeared over her side. I asked how were her bowels. "Rather constipated", was the answer. "So much the better", said I. Then I directed that the bowel be washed out, and in an hour when it had become quiet, two grains of collargolum in two drams of water be given by enema. This was to be repeated at bedtime, both the washing and the medicine.

The next morning temperature was 99, and the patient was feeling fine. The temperature rose to 102½ for a short time in the afternoon, then went down and she was no longer feeling sick at all. The medicine was kept up once a day for about a week. She had no other medicine.

This experience of my friend shows a great difference between giving it properly and improperly.

In scarlet fever, I generally use Unguentum Crede', telling how much is to be rubbed in, laying special stress on the "in". When the skin is hot and dry, it "goes in like penetrating oil", as Mrs. George said.

As to quantity, for an adult administration, I generally direct one-fourth of the half ounce package to be rubbed in once or twice daily, according as there is little or much fever.

When the skin is cool and moist, the ointment does not go in readily, and I prefer the collargolum by enema, generally for an adult, ten to fifteen grains in a teacup of warm water once or twice a day. With children, I use rather more in proportion. I am not afraid to use any amount, as I am sure it is absolutely non-poisonous.

The doctor's little daughter is the only case in the last seven which I have visited after my diagnosis was made. I have had a very few cases in which a mild fever, less than 100, continued for probably two or three weeks.

I have had only one case of nephritis. This was last winter. The little fellow, about six years old, got over his fever with so little weakness that in about ten days he was taken out for a long walk on a cool afternoon, and came back with a nephritis.

PITUITARY EXTRACT.—After describing what is known of the function of the pituitary body, G. B. Roth, Washington, D. C., (*Journal A. M. A.*), notices its therapeutic use and gives a short survey of the clinical literature, which shows that while infundibular extract is relatively non-toxic it does possess a high degree of toxicity in certain cases, especially in its obstetric use, and extreme caution should be exercised in its administration. Little is known regarding its chemical nature and the substances extracted have not the same rank as active principles as the extract from the suprarenal bodies. Roth reports experiments made on the blood pressure effects in dogs. Six samples made by different manufacturers were tested and a great variability in the activity of the preparations was shown. His conclusions are given as follows: "1. Attention is directed to the wide variability that exists in the activity of commercial pituitary extracts. 2. The use of beta-iminazolylethylamin hydrochlorid in 1:20,000,000 dilution is suggested as a standard for use on the isolated uterus of the virgin guinea-pig. 3. The blood-pressure method shows a wider range of variability than does the uterine strip method for the comparison of the relative activity of pituitary extracts and is not applicable to all preparations."

CALCAREOUS CONCRETIONS AND SCLERODACTYLY IN RAYNAUD'S DISEASE

By HALDIN DAVIS, M. B., M. R., C. P., F. R. C. S., Assistant Physician Black Friars' Skin Hospital, Physician in Charge of Skin Hospital, Paddington Green, Children's Hospital, London, England.

Among the complications of Raynaud's disease which have been described by various writers, there is one which has hardly received the attention which it deserves especially at the hands of American and English dermatologists. This condition to which we refer is the occurrence of nodules of calcareous degeneration in the skin itself and in the subcutaneous tissues of the fingers, associated with a general hardening or sclerodactyly. The condition is limited to the fingers and toes and in the cases which have come under the notice of the present writer it has occurred in the fingers only and at the elbows. Continental writers have stated that in very old standing cases the calcification may occur in other parts of the extremities.

The condition was first described by a Swiss physician, H. Weber, in 1878, and the calcareous concretions were in that instance mistaken for gouty tophi. Various other communications have been made in continental journals on the same subject and the whole literature has recently been admirably analyzed by G. Thibiege and R. T. Weissenbach in September 1911.

In England three cases have recently been described, one by Dr. Parkes Weber, one by Dr. G. Norman Meachen, and one by the present writer. This last case which the present writer had the opportunity and privilege of exhibiting before the Dermatological Section of the Royal Society of Medicine, may be considered as fairly typical of the changes indicated above and may perhaps be described in some detail.

The patient was a healthy woman in comfortable circumstances, married, with two healthy children, and aged 33 years. Although of spare build she was healthy in every way. All her life she had suffered from "poor circulation" and as a girl had been liable to chilblains and cyanosis of the extremities. In adolescence she had become liable to attacks of Raynaud's Phenomena in the fingers which went "dead" whenever exposed to cold. But the new changes which made the case so interesting had only come on during the last seven years, starting soon after the birth of her first child. Small hard granules had appeared in the skin near the tips of the fingers, which gradually enlarged in all directions, extending into the subcutaneous tissue and stretching the skin also. Ultimately the skin gave away and a discharge of gritty and calcareous material began which lasted an indefinite time, perhaps some months, during which secondary infection with pyogenic microbes took place, causing the patient considerable pain and discomfort. Except for this secondary infection the lesions were painless. Several of the fingers were permanently shortened and diminished in size owing to long continued suppuration with consequent loss of tissue. There had also appeared over the right olecranon a similar swelling which had gone through similar changes and which when seen by the writer had been discharging grit and pus for about ten months. It is noteworthy that these phenomena had first appeared soon after the birth of the patient's first child and had become very much worse since the birth of the second child, which at the time the patient was first seen, was about seven months old.

On close inspection of the hands of the patient there were observed not only the gross lesions described above and the scars left by them, but also much smaller lesions, which were really areas of hardness or sclerodermia, so to speak, in the skin of the fingers. There was one particularly noticeable, under the wedding ring, apparently induced there by the continual pressure of that ornament. There was also another, quite small, on the left olecranon, which seemed likely to give rise in course of time to a condition similar to that which already existed on the right elbow. These areas were perhaps, too, the beginning of a condition of sclerodactyly which might be expected to become more pronounced in the course of years. Examination with the X-rays and the fluorescent screen was very interesting because it showed the calcareous concretions standing out as dense shadows, much denser indeed than the bones. Such

density alone was sufficient to exclude the possibility of them being gouty tophi and chemical examination showed that they were, in fact, composed of calcium carbonate and phosphate. The patient had had no special treatment for her complaint and it did not seem that any treatment directed to removal of the cause of the complaint was likely to be of any advantage, but it was proposed that the suppurating granulomata should be thoroughly curetted in the hope that healing would be materially accelerated. At the meeting at which the case was shown it was also suggested that after the curettage, X-rays should be applied. Up to the present time, however, the writer has not had the opportunity of carrying out these measures.

Now, Dr. Weber's case is particularly interesting to compare with the one above described because it exhibits a much later stage in the disease and illustrates the further steps in the natural history of the condition. His patient was also a woman, aged 53, unmarried, but clearly of much the same "constitution" as the writer's patient. She however had suffered from similar changes for twenty years, while the writer's patient had only been the subject of them for seven. Apparently the activity of the process had diminished greatly for when seen there were no points of active ulceration and discharge of gritty material, although there was quite a definite history that she had suffered in that way in the past, and the scars of the old lesions were easily visible. As in the other case, the elbows had been affected. The salient feature, however, of the case was the marked sclerodactyly. The flesh on the flexor aspects of the second, fourth and fifth fingers of the left hand was particularly altered and gave the impression on palpation that subcutaneous calcification had taken place. Owing to this change, movement in some of the finger joints had become diminished. In the writer's case movements had not been affected at all. Sensation was somewhat blunted in the thickened and callous skin. The presence of calcareous material was confirmed by X-ray examination but it was not massed so densely as in the writer's case. In fact, the hard distinction to be drawn between the two cases was that in the writer's case the condition was more acute while in Dr. Weber's it was more generalized.

Dr. Meachen's case was not exactly similar to the two above mentioned. His was in a woman aged 59, in whom there was no definite history of Raynaud's disease and in whom the condition only started at the age of fifty-four. She had had "white-heads" in the tips of the fingers which broke and ulcerated, but the most conspicuous feature in her case was the gradual tightening and hardening of the skin of the fingers, although it is uncertain whether calcification had occurred, so that the phalangeal joints had been stiffened. She also had a hard apparently calcareous patch on the exterior surface of both fore-arms. Her condition resembled that of generalized scleroderma with the remarkable distinction that the scleroderma was limited to the hands. This circumstance was remarked when she was seen by the Dermatological Society of London, 1902.

These three cases form an interesting and unusual series. The present writer wishes to record them and draw attention to them rather under the impression that if watch be kept it will be found that there is a relationship more intimate than is generally supposed between scleroderma and that curious condition of the vasomotor mechanism which is known by the name of Raynaud's disease.

ANESTHESIA DON'TS.—Don't be alarmed at slight cyanosis when using nitrous acid.

Don't forget that jactitation, when using nitrous oxid, calls for more oxygen.

Don't forget that nitrous oxid can be given safely at any age.

Don't forget that nitrous oxid and oxygen is the safest anesthetic known, but it is not always satisfactory to the surgeon.

Don't fail to have a witness when inducing anesthesia, especially when using gas. Many lawsuits have resulted because this precaution was not taken.

Don't forget to empty the bladder before giving gas to children, as they often urinate while under its influence.

Don't forget that nitrous oxid is the safest anesthetic for short operations and examinations.

Don't expect a good anesthesia when using nitrous oxid on alcoholics.—The Railway Surgical Journal.

AUTOINTOXICATION

By GEORGE L. SERVOSS, M. D., Gardnerville, Nevada.

Now that Lane tells us that there may be kinks in the colon, and that toxemias may follow such condition, what are those who will have nothing of a general toxic condition originating within the bowel, going to say? Lane has undoubtedly shown, and that very conclusively, that kinks may occur within the large bowel and that such may cause more or less stasis within that portion of the gut. Further, he has shown that such stasis may be followed, in fact, is very frequently followed, by toxin absorption from that portion of the alimentary canal. This finding utterly destroys the truth of the assertion that toxemia follows stasis of the small bowel alone.

But is there anything particularly new in this finding of Lane? While it may be true that certain few of the more ultra-scientific have made contrary arguments, there have been many of us who have recognized the truth of Lane's assertions for a goodly number of years. We may not have known that the condition was due to a kink, or several kinks in the large gut, but we have known from observation that a large bowel well cleaned out and subsequently kept clean and normally functionating, has acted to overcome the incident toxemia. Of course Lane will tell us that surgical interference is required in many cases, but we, who have treated numerous cases of the sort, have found that our patients have shown either recovery or marked improvement.

We who have made a study of toxemias originating from the bowel have noticed that most of our constipated patients have suffered more or less from general poisoning. We have accepted the teachings that constipation exists mainly within the large bowel, and such being the case, we have come to the conclusion that toxins have been absorbed from the retained organic matter within this portion of the alimentary canal. We have seen the bowel cleared through the use of enemas and these followed by local application of antiseptics, act to overcome subsequent toxemia, and that without a general purge, or the exhibition of antiseptics orally. In our mind this is conclusive evidence that toxemia may originate within the large bowel.

Not only have we seen toxemias with constipation, but we have seen some such conditions in the face of diarrheas due to inflammation of the sigmoid. We have seen those old soldiers who suffer from chronic diarrhea with marked symptoms of general toxemia, in which cases Cook's method of treatment, irrigation of the colon with copious hot enemas, has not only brought relief from the diarrhea, but in addition has done away with the general toxic conditions. In these cases there has been nothing present to indicate stasis in any portion of the gut, either small or large, that is, over any considerable period. It is very probable, however, as Lane has pointed out, that there is a kink at the sigmoid in practically every one of these cases and that the "trap" in the sigmoid is obliterated and that, while a diarrhea is present, there is more or less retention of fecal matter at the lower end of the bowel.

While Charcot may have been wrong, to some extent, when he said that 95 per cent of all diseases were due, initially, to a toxemia originating within the bowel, those of us who have given close study of this subject have every reason to believe that he was not largely in error. While the percentage may not be at 95 it is surely above 75 per cent. If you will take cognizance of practically all of the acute infections coming under your observation, you will find that, in the majority of instances, the general vitality of your patient has been lowered through toxin absorption from the bowel. You will also note that a clearing out and cleaning up of the alimentary canal, in all such cases, will bring about a marked improvement in the specific condition, and that frequently without the use of any remedies directed against the latter. If there is no such thing as autoinfection or autotoxemia, why then do we give the initial purge, "puke" or sweat and why are either of these so frequently efficacious in bringing about an improved condition? If there is no such thing as toxemia, due to absorption of noxious matters from the bowel, why is it that we see so many toxic headaches showing relief following an active purge? If there is no such thing as toxemia of this character, why is it that the so-called bilious condition is relieved by a purge which has no direct effect upon the liver? It cannot be that the condition is due to pressure, due to accumulation of matter within the bowel and that it is

a reflex due to this pressure, as there are cases, which are relieved by the purge and subsequent intestinal antiseptics in which there is little, if any, obstipation. Consequently there must be some absorption of toxins to account for the many vague symptoms which we encounter in our everyday practice.

Have you ever noticed, and that within yourself, that an inattention to a call of nature to stool is very frequently followed by either a feeling of malaise or more marked symptoms? Can it be that these general symptoms are due directly to the reflex from an overloaded bowel? We believe not. Of course, a considerable mass retained within the lower bowel may give rise to reflexes, but the latter symptoms should not, as they so frequently do, remain after the bowel is cleared out, at least for some little time. If the symptoms were solely reflex they would disappear at once with the clearing of the bowel. If they were reflex there would be no coated tongue, no foul breath, no loss of appetite, in fact, none of the signs of a toxic condition.

Those who maintain that there can be no such thing as a toxemia resulting from absorption from the bowel are not consistent. They forget that we have a general toxemia resulting from several of the specific bowel disturbances. In typhoid fever, where the nidus of infection is within the bowel, we see a marked general toxic condition. In typhus the same is true and in dysentery we likewise find a general poisoning, and due to absorption of toxins from the bowel. If specific toxins products are so absorbed, it stands to reason that this is true of others.

In the specific infections, in which the bowel is not directly involved, as pneumonia, tonsillitis, rhinitis, influenza and others of this sort, it is a noticeable fact that the clearing out of the bowel and the keeping clean thereof subsequently, shows a rather marked improvement in many instances. In tuberculosis, of the pulmonary class, it is shown that a clean bowel acts as a synergist to all other treatment.

If there is no such thing as autotoxemia, why is it that we find that the major portion of those succumbing to specific diseases possess a bowel which is more or less non-functionating, while those who escape in contagious epidemics are normal in every respect? It is hardly possible that the latter possess antibodies directed against the acute infective agent any more than have the former. Their vitality has simply not been sapped by toxins within the blood and tissues and in consequence their combating powers are not lowered to such an extent as to allow of the specific infecting organisms.

If there is no such thing as autointoxication, due to absorption from the bowel, why then make any laboratory tests? If there is no such thing why then do we get recoveries in those cases in which we find either a urinary hyperacidity or indican therein and in which we not only increase elimination but alkalinize our patients, as well as employing the intestinal antiseptics conjointly? If a condition of this sort is not present, what one is?

If there is no such thing as autointoxication, why then, after we have administered a purge, or several of them, either with or without enemas and followed these by the chemical intestinal antiseptics and these by the bacillus bulgaricus, do we so frequently see our patient become normal? Why do we find our seemingly anemic patient becoming rosy-cheeked after a course of such treatment if the blood has not been more or less poisoned by the absorbed toxins? Why do we see the sallow become of good complexion after elimination is well established and the bowel rendered aseptic, or as nearly so as possible?

It is a noticeable fact that the majority of those who combat the idea of autointoxication are men who give much more attention to consultation than to general practice—men who do not follow cases from beginning to end—men who rarely, if ever, see conditions in their incipiency. While they may be diagnosticians of note as regards specific conditions, they are not, as a rule, conversant with the seemingly trifling things one finds in his everyday practice. They know the signs and symptoms of pneumonia, typhoid fever and the rest of the infections of a specific nature, but they do not know much, of anything, of the things leading up to these conditions. They see the patient only after he has become overwhelmed by the acute infection of a specific nature and when the simpler signs of non-specific toxemia have been practically obliterated. They do not know that some of the symptoms present are signs of a non-specific toxemia, as do those of us who have traced the condition from end to end. Consequently it is little wonder that our ultra-scientific doctors tell us that we are wrong in our premises.

In these days too much attention is being given to the laboratory worker and not enough to the man in the field. The former, although

a necessary adjunct, unlike the latter, very frequently never comes in contact, personally, with the case under observation. He does not take into consideration any of the results following the application of therapeutic agents in reaching his conclusions and consequently his findings are frequently in error. The man in the field may make no laboratory tests and may rely wholly upon the signs presenting, but in the vast majority of instances he is more nearly correct than is the man at the chemical or microscopical desk. He verifies his primary observations through the notation of effect of his therapeutic agents. The laboratory experimenter has told us that the intestinal antiseptics cannot render the bowel aseptic, wholly, and consequently should not be employed. The worker in the field has seen the results attending the use of these agents, and while he does not even suggest that the gut is rendered more than partially clean, he knows that he gets satisfactory results from the use thereof, which is all he requires. If the man at the desk, or the editor who accepts the findings of others and bases his ideas wholly thereon, were to go into the active field of practice, even but for a short while, it is very probable that all argument contrary to the condition of autointoxication, due to absorption of toxic material from the bowel, would be dropped, and never to be resumed. We in the field know that there is such a thing. We also know that the majority of the acute infections and other maladies are primarily due to this one underlying cause and we believe that all abnormalities can be traced thereto. Too much credence is placed in the arguments of those who are presumably our peers and not enough in the sayings of the everyday practitioner, the man who does the majority of the work. It is the teacher within the school, and regardless of his personal experience, who gains the listening ear of the majority of the profession. It is the editor who does but little practice who likewise gains the ear of the average doctor. If the general practitioner, the man in the field who is coming in daily contact with conditions of all sorts, and following them from their incipiency to their termination, even makes a suggestion, his remarks are met with scorn. It is the latter, however, who is the real doctor—the man who makes the real discoveries. It is the latter who contends that there is such a thing as autointoxication and who can demonstrate the condition to he who will listen, and that regardless of what the college professor or ultra-scientific editor may have to say to the contrary.

We believe that Charcot was nearly, if not quite, right in his assertion and we further know that we can demonstrate the truth of that assertion in a practical manner, if we can but gain the attention of those who contend to the contrary.

UTERINE BLEEDING.—The more important points of an instructive article on uterine bleeding, by E. Novak, Baltimore (*Journal A. M. A.*), in which he reviews the relations of the ductless glands and the nervous system to uterine hemorrhage, are given by him as follows: "1. The proper basis for the study of uterine bleeding is the study of normal menstruation, along physiologic as well as anatomic lines. 2. The factors concerned in normal menstruation are (a) an ultimate cause, residing in the ductless gland chain; (b) a nervous mechanism, essentially vasomotor in character; (c) the uterus, and especially the endometrium. 3. The causes of uterine bleeding may therefore be grouped as (a) fundamental, involving disturbances of the internal secretions; (b) nervous, exerting their effect mainly through the vasomotor nerves; (c) anatomic, in which structural changes are present in the uterus or other pelvic organs. 4. Most frequently the exciting cause of uterine hemorrhage is anatomic, the lesion being in the uterus, tubes, ovaries, blood-vessels or even the blood itself. 5. In a not inconsiderable number of instances, bleeding is due to fundamental or nervous causes, especially at the two extremes of menstrual life, puberty and the menopause. 6. There is good reason to believe that much light will be thrown on the role of the fundamental causes, and perhaps even of the nervous causes, by clinical methods of study which are based on the relation known to exist between the ductless gland apparatus and the vegetative nerve system."

COLONIC INFLATION IN APPENDICITIS.—Inflation of the colon (*Kentucky Medical Journal*) should be regarded merely as an aid in the diagnosis, history and physical examination being far more valuable. The authors have seen no positive reactions in normal individuals. The test is in no sense pathognomonic of chronic appendicitis.

NON-SURGICAL GYNECOLOGY WITH SPECIAL REFERENCE TO PELVIC MASSAGE

By FERDINAND HERB, M. D., of Chicago, Illinois.

Despite the fact that surgery today stands at the zenith of its accomplishments, there is an undercurrent in medical thought and teaching which distinctly points to a less operative era in the near future.

In Europe, for the past ten years the *"non-operative"* spirit is gaining in strength daily. This change is unmistakably evident from medical literature. Non-surgical methods are preferred everywhere. The great gynecologist, W. A. Freund of Strassburg, Germany, who himself made the first abdominal hysterectomy for cancer in 1878, goes even so far as to arraign mercilessly unnecessary surgery by proclaming in his recent autobiography: *"Every organ removed by operation is a weighty proof of the inefficiency of our art."*

But also in America the dawn has come. It cannot be without profound influence upon the American physicians and the public if a leader such as Dr. John Murphy, of Chicago, steps into the arena for bloodless methods of treatment when he states, as he did at the recent Clinical Congress of Surgeons of North America, *"that the accomplishments of internal medicine during the next quarter of a century will be enormously greater than that of surgery, and that if he were to start again to study medicine he would unhesitatingly take up internal medicine in preference to surgery."*

In sympathy with this tendency to resort to non-operative procedures, efforts are being made all over Europe not only to restrict operative measures but also to improve non-operative measures. The results are, indeed, very encouraging, especially in gynecology. They should serve as a stimulant to adopt that which is worth also here, on this side of the Atlantic.

That the treatment of diseases of women, as now practiced in America, is not satisfactory in its results, is evidenced by the enormous sales of nostrums offered for the cure of female diseases, in spite of all efforts to enlighten the public on the worthlessness of most of these agencies.

To keep our patients from drifting from bad to worse, we physicians must be able to offer them something else besides the alternative between inefficient, old-fashioned treatments and mutilating operations. It cannot be denied that our treatment with tampons, douches and medicines—practically the only thing recommended in textbooks and taught to students—fails utterly in the majority of instances. The advent of a few more antiphlogistics and sedatives has not changed the conditions that existed twenty years ago. Speaking of the results in those days, at the outdoor department of the Woman's Hospital of New York, which at that time was directed by such eminent men as Emmet and Buckmaster, Dr. Vineberg says: *"Some of these cases are benefited by the routine treatment of iodine, glycerin tampons and hot douches, but by far its greatest majority fail to receive any relief after months of treatment."*

Better methods of treatment are now placed at our disposal by the great advances in electrotherapy, radiotherapy, thermotherapy, hydrotherapy; but it is particularly gynecological massage that offers an unusually inviting and promising field to the general practitioner.

Ordinary massage has been known for thousands of years and is now being generally employed. Its usefulness and merit are established beyond question. No hospital, clinic, sanitarium or dispensatory staff is complete without some one adept in the treatment with massage. Strange as it may seem, in gynecology no systematic attempts at massage were made until Thure Brandt, a layman and major in the Swedish Army, developed his method of treatment. Though its success was great and his fame spread widely, Thure Brandt, the layman, did not find recognition among the physicians of his time until he demonstrated his method and proved its success at the clinic of Prof. B. S. Schulze of Jena, the Father of Gynecology. Fifteen cases were given him for a test. They have been published in full by Prof. Profanter.

The outcome was so favorable that Schulze adopted the greater part of Brandt's method. Ziegenspeck, his assistant, went to Sweden to study it more thoroughly. He was the first one in Germany to treat cases

according to the master's own directions. Schauta, Saenger, Duehrssen, Hertzsch, Prochownick, Piering and many other prominent physicians and teachers of Europe followed his example. From all over the globe progressive physicians began to gather at Brandt's place. The French Government took cognizance and sent a deputation to Stockholm to investigate. It returned praising Brandt's method in glowing terms. The enthusiasm ran high. Gynecological massage became the hobby of the day. Every physician felt qualified to practice it. This proved disastrous. While some cautious physicians equaled Thure Brandt in his accomplishments by a careful selection of the cases and a complete mastery of the technic, others brought the method into discredit by using it improperly and indiscriminately. Those who looked skeptically upon massage from the beginning soon found ground for bitter and warranted criticism.

Olshausen of Berlin, the inventor of ventrofixation, was perhaps the most prominent, and most outspoken, gynecologist in opposition to Brandt and his method. But even he paid his tribute to Brandt by admitting: *"It will always be to his credit to have popularized massage and to have recognized its valuc."* In the same discussion he further admits the great value of massage in a number of gynecological afflictions. He said: *"Broese saw excellent results in cases of residua of perimetritis and parametritis. These residua (adhesions and scarformation), thc retroflexio fixata, parametritis posterior, perioophoritis, oophoritis—these are afflictions in which massage is of great benefit."*

For many years after the introduction of massage there was great uncertainty as to the indications, much to the injury of the patients and the method alike. This is clearly shown in the contribution of Olshausen to the *Zentralblatt fuer Gynecologie*, of 1901, in which he says: *"I am convinced that even today, as 10 to 12 years ago, massage is still used by many much too extensively, in most instances in cases in which it is absolutely irrational, and where it can possibly do no good."*

In his strictures Olshausen does not condemn massage itself, as has been falsely stated in American literature, but its abuses. If we are justified in condemning a method because it is being abused, what about surgery? No sane man will condemn this great branch of medical science because it is being abused; because operations are frequently made where they are not justified; because life, health and happiness of countless human beings are jeopardized daily by incompetent surgeons. To apply the remedy, we must stop abuses, place our indications right and acquire the necessary experience and technic. If this is done in gynecological massage, it will show results that compare favorably with the best of operative results.

This has been done in Europe. In consequence massage is well established today in Germany, Russia, Austria, France, etc. It is practised with the best of success by many physicians and gets due consideration in the best of European textbooks.

Not so in America. The seeds that fell upon American soil did not thrive, partly, perhaps, because massage is difficult to perform, partly because the splendid momentary results of the fast advancing American surgery made a bigger impression upon laymen and physicians. The voice of Vineberg, Mayer, Rumpf, Boldt and others remained unheeded. So it comes that—unfortunately—American teachers, as a rule, know gynecological massage only from hearsay and most American text-books do not mention it or only briefly, while the average American physician has never heard of it, or seen it practised.

This condition of affairs is, indeed, very unfortunate. It robs the American physician of the best of non-operative measures at our command for the cure of gynecological afflictions, and thousands upon thousands of women must suffer who would be willing to pay a handsome fee to their physicians for a cure without the use of the knife.

To do justice to these cases, however, pelvic massage must cease to be a cure-all. The indications and contra-indications are today so well defined that there should be no difficulty in the proper selection of the cases. The indications given below are but a fraction of those put up by Thure Brandt; but this fraction has stood the test of time. It is that fraction which an extensive practical experience with thousands of patients has taught me to be correct.

The importance of pelvic massage must stand or fall with the number of cases benefited and the results achieved as compared with those of other methods. I will, therefore, critically illuminate these few indications, so that this method of gynecological treatment may be properly placed before the practitioner. In this way he is enabled to

form his own opinion and need not depend upon a few unjust criticisms.

Enlargement of the Uterus.—Of this large class of cases only a smaller percentage can be benefited by massage, namely: cases of recent origin, in which the enlargement is due to engorgement and stasis, caused by local conditions. At a later period, when the enlargement is due to the formation of fibrous tissue, massage, as all other non-operative measures, is usually of no avail.

But in those cases in which massage is indicated it secures results that are not equaled by any other method. This is especially true in recent cases of puerperal subinvolution. Assuming that the complications such as lacerations, malpositions, etc., have been duly attended to, and that the uterus in spite of the ordinary treatment with ergot, hydrastis, glycerin tampons, hot douches, etc., did not sufficiently reduce in size, I urgently advise a trial with massage to those who are qualified to practise it. If they have once had recourse to this method of treatment, they will never again waste time and energy on medicinal treatment only. In these cases of sub-involution, the muscular elements of the uterus are still intact. Massage affords the quickest and most powerful agency to produce contraction and at the same time it improves circulation and relieves stasis immediately. In this way the soft and boggy uterus becomes firmer, smaller and less painful from the start, while the discharge, bleeding, weight in the abdomen and other distressing symptoms of the patient disappear quickly. If the sensitiveness is too great in the beginning, the electric current will help much to make a quick start with massage possible. The earlier massage is begun, the better the result.

Displacements of the Uterus.—No physician, who does not practise massage, can appreciate the excellent satisfaction which may be obtained in a non-surgical way in these frequently most troublesome cases. It is true that a small percentage of patients suffering from displacements must always go to the surgeon, but this percentage is proportionately small as the gynecologist is able to do his work. In this spirit Prof. Kuestner, of Breslau, Germany, says: *"May our operative results be ever so good, may our progress, inaugurated by the operative era, be ever so great—that what can be accomplished in cases of retroflexion with a persistent orthopedic treatment, if attainable, must be valued higher than the best of operative results. The bloodless orthopedic treatment will come into its own aside and above operative treatment in these cases, in which, indeed, it accomplishes better and more ideal results than the latter."*

In case of retrodeviation without adhesions the modus operandi is well defined; bimanual reposition and pessary. Massage is not indicated.

In cases of retroflexion which are complicated by adhesions and exudations *"the complications should be attacked by massage,"* admits Olshausen. As soon as the complications are removed and the uterus can be properly kept in place by a pessary, massage is no longer necessary.

The time required to accomplish this purpose by massage varies according to the extent of the complication from a few days to weeks. An average case yields within a week or two. To appreciate what this method of treatment means to the patient one needs but to witness the gratitude of those women who are freed from pains and discomfort in this quick and easy way after being advised by one or more physicians that nothing short of an operation would cure them!

Cases in which the pessary is not tolerated, or in which massage is not advisable (virgins, etc.), or in which the uterus cannot be retained in proper position by massage and pessary—these are the cases that justly belong to the surgeon.

The large class of lateral deviations, which are caused by shrinking scars in the connective tissue of the pelvis, can be treated satisfactorily only by massage. Frequently a few treatments suffice to relieve the patient. More of this under the last indication.

The firmness of adhesions need not deter from massage at all: *"With the necessary patience very extraordinarily extensive and very tied adhesions can be separated and very ideal orthopedic results as to deviation of the uterus may be accomplished,"* says Kuestner. As a substantial proof of this fact I refer to (Vineberg), *"a case of retroflexion with fixation in which Schulze had failed to free the uterus forcibly in narcosis by three different attempts, while Brandt subsequently succeeded in bringing the uterus forward in six weeks' treatment."*

My own experience has been to the same purpose. There has never as yet come under my hands a uterus so firmly adherent to the sacrum that it did not yield to the slow but sure persuasion of the massaging hand.

Among non-surgical methods, of treatment that come in competition with massage are: Schulze's methods and tampons.

In cases in which the uterus is tied down very firmly Schulze recommends to tear it

off its moorings forcibly during narcosis. I witnessed this operation once during the time I was assistant to Ziegenspeck in Munich, but my impression of it was such that I will never attempt it myself. I can see no advantage in this method over massage which accomplishes the same or better results in a safer way.

To try to raise the adherent uterus with tampons, as recommended in most American textbooks, while massage is at our disposal looks to me like a ride on a lumber wagon when a railroad is at hand. By way of comparison I have tried tampons in a number of cases and found them far behind massage in efficiency. To illustrate the point, I will refer to the recommendation of tampons in the treatment of a non-adherent retroposition of the subinvoluted uterus by Kelly and Noble. After describing the procedure the authors continue: *"If after six weeks' trial the uterus does not regain its normal position, the patient should be anesthetized and the question of adhesions definitely settled."* This advice is undoubtedly based upon the experience of these authors with this slow and unsatisfactory method of treatment. Six weeks of such treatment in trying to raise a subinvoluted uterus into proper position would tax my patience beyond the limit of endurance. Massage brings up these uteri frequently with one treatment, and rarely, if ever, requires more than a few days, especially if supported by electrotherapy. At the same time it obviates narcosis, as during massage the question of adhesion settles itself. If the uterus is too sensitive to be massaged, it is too sensitive to be coaxed up by tampons. Under these circumstances a faradic current with a long, fine wire, or better, a sinusoidal current applied with a bipolar, vaginal electrode for 15 minutes to one-half hour or, if need be, for an hour or two, is of great help. It reduces the sensitiveness and makes massage and a prompt replacement possible almost immediately.

Peritoneal Adhesions.—Peritoneal adhesions may exist between the pelvic organs themselves or the pelvic organs and their surroundings. They may consist in only a few cobweb like strings or may glue the pelvic organs and their surroundings together into one solid mass; they may be the product of inflammation or operations. Their origin and extent must determine the treatment, as they rarely exist without causing more or less symptoms.

In cases in which the adhesions are very extensive the prospects for good results from massage are not very favorable.

However, to do justice to massage in these cases of extensive peritoneal adhesions we must look upon these conditions from a preventive standpoint rather than a curative one. We do not reject surgery in cancer because it brings no satisfactory results in the last stages when the uterus is immovable and the ligaments are a mass of cancerous tissue. Instead of lamenting over the inefficiency of surgery, we bend all our efforts to get these cases at a time when it is still possible to operate. The same is true in reference to massage in peritoneal adhesions: we must begin with them as early as possible. Although I succeeded in giving relief in a few cases in which laparotomy showed operative interference impossible on account of too extensive adhesions—we are almost powerless with massage in cases where old, broad adhesions tie the pelvic organs together solidly. But we are not powerless at a time when these extensive adhesions are forming or just newly formed; at a time when the development of connective tissue band has progressed only moderately and the adhesions are still yielding. It is at this time that we must take hold of these cases, that is, at the time directly after the subsidence of the acute symptoms, provided always that the micro-organisms can be assumed to have perished and massage is begun under the proper precautions.

If this could always be done, it certainly would make a great deal of difference in the health and happiness of women. It can be done if the family physician is trained to handle these cases properly at the right time. With a comparatively few careful massage treatments the source of much future ailment could be eliminated.

Unusually quick and perfect results are frequently obtained if the extent of the adhesions is limited and especially if they involve the ovaries. I will illustrate this with a few examples:

Mrs. T. A., of a well-to-do family, 34 years old, married 3 years, no child. Since 6 months pain in right side, radiating up and down. Pronounced reflex symptoms. Family physician diagnosed enlargement of the right ovary and advised operation. Not satisfied, the patient consulted specialists in St. Paul and later in Milwaukee. Both specialists came to the same diagnosis and also advised operation. When the patient appeared at my office the previous diagnosis was confirmed: decensus of the right ovary with enlargement and fixations. Six treatments made the patient well and she remained so up to 3 years later, when I last heard of her.

Miss A. A., 22 years old, servant girl. Had

for several years recurring attacks of pains in her right side, beginning after typhoid fever. Last attack began 3 weeks before I saw her. Failing to improve her, the physician in attendance persuaded her to have her ovary removed, but was suddenly called out of town before he could operate. I found the patient in bed with severe pains on the right side, which could be distinctly traced to a swollen, adherent ovary lying immediately above the right Douglas fold. After a few days of antiphlogistic treatment she came to my office. Within two days the tenderness was greatly reduced by electricity. Massage was then begun. Twelve treatments brought the ovary to its normal place and removed all pain. The patient never had another attack and remained well up to the last time I saw her, which was three years later.

I could frequently feel the separation of adhesions quite distinctly. It is characterized by a sudden yielding and a soft, snappy feeling. I have never observed a bleeding or any other untoward effect afterwards, as I used but little force in massaging.

Exudations and Blood Extravasations into the Ligaments.—When fresh, or so long as fever exists, they should be left alone. Later, massage is far the best treatment to aid absorption and restitution to a healthy state and prevent adhesions. There is no difference in this regard between the pelvic cavity and other parts of the body, for instance, arms or legs, where the excellent results accomplished by massage under such circumstances are too well known to every physican to call for further argument. Says Ohlshausen: *"That in these cases a cautious massage will do good and facilitate and accelerate absorption, I am convinced, as I think, are all gynecologists."* He refers to a case under his observation in which an exudation, 8-9 years old, caused a tight and broad fixation of the uterus towards the right sacro-iliac symphysis. After 20 treatments, the uterus became so movable that at the time of the report it was lying in almost proper position.

The following unique case shows that the seeming impossible can sometimes be accomplished with massage:

Mrs. R. C., 40 years old. Two years previous to coming to my office she had an artificial anus made because the feces could no longer pass the obstructed rectum. The obstruction was declared by the physician to be of cancerous nature. At the examination I found the entire pelvic cavity obstructed by a hard, fibrous mass that surrounded the uterus from all sides and closed the rectum so tightly that even flatus did not pass. There was no breaking down of tissue and no sign of cancer.

After explaining to the patient the apparent hopelessnes of her case, I was persuaded to try massage, as the patient suffered very much. After a month of daily treatments through vagina and rectum, flatus and very thin stools began to pass occasionally. After another month they came regularly and in larger quantity. After another month the passage in the rectum was so wide that hard masses began to pass and the patient felt considerably better. After another month of treatment the patient had to leave for her home in the East. Upon inquiry she reported a year later that the improvement had continued somewhat after her departure. She had the artificial anus closed and was able to discharge her feces in a natural way, though sometimes with a little difficulty.

Residua of Acute Inflammatory Processes, Scar Formation, Fibrous Cords and Bands, and Chronic Shrinking Inflammatory Processes within the Connective Tissue of the Pelvis.—These are the last, but not the least, of the indications for massage. They are, in fact, the most important: first, on account of their great frequency, and, second, because the indication for massage is here not relative but absolute. There is no other way to satisfactorily treat these pathological fixations but by massage. Nothing else will loosen and lengthen or prevent the further shrinking of these scars and bands, which distort and displace the organs, obstruct the flow of blood, bring on congestion, compress the nerves and cause those innumerable pains and aches from which so many women suffer. Massage alone can do this work and should be used in every instance where relief is sought.

If there were no other indications for pelvic massage but these residua of acute and chronic inflammatory processes, enough cases would present themselves to the family physician to make it worth his while to try and master gynecological massage, so great is the percentage of cases belonging to this class. This is evident from the fact that scar formation and shrinking processes within the loose connective tissue of the pelvis frequently follow those numerous inflammations arising from childbirth, wounds, infections with gonorrhea or other pathogenic microbes, cohabitation, appendicitis, constipation, inflammation of the bladder, general diseases such as scarlet fever, measles, typhoid fever, etc. These scar formations again on their part cause a great many local and general distressing symptoms which affect almost every organ

of the body and are exhibited more or less by most sexually afflicted women. A formidable list of these general or reflex symptoms has been given in the excellent *"Handbuch der Gynecologie,"* by Veit, 5th volume. It can be found in Van Rosthorn's article on *"Diseases of the Pelvic Connective Tissue."* The author emphasizes the fact that *"a connection between these nervous manifestations and the alterations in the connective tissue of the pelvis is undoubtedly present: because the removal of the latter causes the former to disappear."*

That these reflex symptoms actually disappear, often very rapidly, when the cause is removed by massage, has frequently been observed by me. I might mention here four striking cases of asthma, belonging to this class. In each instance the patient came to me for the treatment of a gynecological affliction and quite unexpectedly developed a spell of asthma during the first examination or one of the subsequent treatments. The cause was thus unmistakably disclosed and in all instances a speedy cure was effected in spite of the fact that no treatment but gynecological massage was employed. One of the cases had resisted the ordinary asthma treatment for 15 years.

However, there is one way of coming to actual figures as to the frequency of these chronic inflammatory processes, which I think, Vineberg correctly places at from 50 to 75 per cent. of all gynecological cases. The Douglas folds comprise only a part of the pelvic connective tissue. Subacute and chronic proceses within these folds (parametritis posterior) were found by Schulze in 70 out of 250 patients coming under his care in one year; by Frankel in 50 per cent. out of 10,000 patients, in 10 per cent. constituting the illness per se and in 40 per cent. existing side by side with other pathological conditions.

The accumulation of ganglionic masses in the neighborhood of these sacro-uterine ligaments seem to make them, when diseased, especially prone to produce a great many of these *"reflex symptoms."* At least this is my experience. This is also the reason why their massage and stretching often yield unexpected improvement in remote organs. Thus it did in the four cases of asthma above referred to. Engelhorn also noticed in cases of shrinking of the sacro-uterine ligaments *"surprisingly good results from manual stretching of these ligaments from vagina and rectum."*

Indeed, I think that most physicians have seen these good results, but attributed them to other causes. I refer here to the striking improvement of some gynecological cases after the abrasion of the uterine membrane. That this is due in many instances to the stretching of the rear ligaments and not to the abrasion itself is evident from the fact that in these cases the pathological symptoms frequently reappear in a few weeks in the same measure as the ligaments again contract. In all these instances a proper massage would permanently relieve the patients.

Of how little value in the cases under discussion are all other curative measures but massage may be gleaned from the fact that in the lengthy and exhaustive treatise of Von Rosthorn on chronic pelvic cellulitis massage is the only local treatment mentioned. Of this he says: *"In the localized parametritis chronica, especially the retracting and fixating kind, massage has its most excellent results. The beneficial influence of massage has its explanation on the one hand in the analogous effect of this kind of treatment in cases of shrinking scars on other parts of the body; on the other hand, in the meaning of Nussbaum's nerve stretching."*

The treatment by massage of tumors, prolapsus uteri, hydrosalpinx and other pathological conditions not mentioned above has not been practiced by me after I left Ziegenspeck. We occasionally tried massage in some of these afflictions at his clinic. Dr. Schmidt, my predecessor as assistant, succeeded in removing a tumor in this way, as recorded in Ziegenspeck's book. However, I think, other methods of treatment are much better in these cases.

Contra-indications.—Absolute contra-indications to gynecological massage are the following conditions:

(a) Presence of pus (abscesses, pyosalpinx).
(b) Fever (acute inflammations, especially acute gonorrhea, acute salpingitis, ovaritis, and all those subacute cases in which the presence of the gonococcus may be suspected).
(c) Extrauterine pregnancy.
(d) Pregnancy.
(e) Tumors (benign, malign).
(f) Tuberculosis.

Importance of Gynecological Massage to the Surgeon.

The success or failure of an operation depends not only upon the skill of the surgeon, but also upon the condition of the patient before and after the operation. The more fav-

orable that is, the better the chance for the best results. If the patient comes to the table with the remnants of an exudation left in the ligaments; the sexual organs congested or buried in a mass of broad, tied adhesions; the circulation of blood and lymph impeded and the nerve supply disturbed—it is evident that the operation will not only be more difficult and take longer time, but the danger will be greater, the healing delayed and the possibility for the formation of new adhesions increased. If massage is employed before the operation long enough to remove existing exudations, improve the circulation, break up some of the adhesions and lengthen out and stretch the rest—the operation is performed more quickly, the shock to the patient is not so great, the circulation and chance for healing is better, and the possibility or probability of post-operative adhesions decidedly less.

Massage after the operation is of equal importance in cases in which it is impossible to cover all denuded surfaces, or in which otherwise post-operative adhesions are expected or feared, or in which scar-formation exists in the connective tissue of the pelvis. Many an operative failure and many a second or third operation necessitated by post-operative adhesions, can be prevented if these adhesions are attacked by massage at a time when they are still soft and yielding. There is no valid reason why massage should not be just as, or still more, valuable to the gynecological surgeon as it is to the general surgeon.

Mrs. A. A., 38 years old, 3 children, had ventrofixation performed in St. Paul, Minn., by a prominent surgeon for the relief from a very annoying retroflexion with fixations. She felt fine after the operation and left the hospital in splendid condition: A grand surgical success! But after two months of perfect health the old symptoms began to return and at the end of the third month she was just as bad as ever. Examination revealed the fundus uteri back deep down in the Douglas pouch. The abdominal scar appeared perfect. After two weeks of treatment a pessary held the uterus in anteflexion and health again was perfect. Patient felt well one year later, when, after learning how to apply the pessary herself, she was lost sight of.

Massage as a Diagnosticum.

It is well known that even the best gynecological diagnostician cannot make a correct diagnosis in all instances at the first examination. Prudery or nervousness on the part of the patient, pain, adhesions, adipose tissue and many other conditions may thwart the first attempt to arrive at a definite conclusion. In all these instances massage comes second only to narcosis as a diagnosticum. As the pains decrease, the patients relax their abdominal walls, exudations disappear, adherent organs are separated; many doubtful cases clear up beautifully. Just how great the diagnostic value of the repeated examinations during massage may be came out distinctly at the Medical Congress at Berlin in 1890, when Leopold asserted that the organs of the small pelvis could not be felt and, therefore, not be treated. A storm of indignant protest followed this rather curious statement and speaker after speaker arose to declare that, if their diagnosis was not clear at the beginning, it certainly became so during treatment.

The justification of these many men in repudiating Leopold's assertion can be demonstrated no better than by a test with massage in difficult cases. It is remarkable with what clearness the organs of the small pelvis can frequently be mapped out after a few massage treatments. It is further remarkable how quickly and surely the diagnostic skill of the gynecologist increases with the practice of massage. In this way a greater skill in diagnosing and a better diagnosis will enable the physician to do better work and render superfluous many of those operations that are performed purely for diagnostic purposes.

The technic of massage is here omitted. It is given in detail in Thure Brandt's own book, or in Ziegenspeck's book: Massage Treatment in Diseases of Women. I refer those interested to these treatises.

However, to all who desire to learn massage I wish to emphasize what Dr. Vineberg says: *"I can only repeat what I have said on a former accasion, and what everyone has said who has written on the subject from practical knowledge; that it is not to be learned from books and articles, nor is it to be acquired in a few days."* This, I think, is true as a rule. There may be physicians who are able to learn gynecological massage from books and articles, but the bulk of physicians require a teacher.

Gynecological massage is by no means easy to learn. Untold harm may be done by the inexperienced. Even the physician who can make a fair gynecological diagnosis is by no means per se qualified for massage. It requires much judgment in the selection of the cases and a good deal of experience even for an expert gynecologist to do justice to massage. No tyro can practice it properly. It is for this reason that gynecological massage can, I believe, never be successfully taught to

students. Students are no experts. It can only be taught in post-graduate courses to those physicians who have learned to make an exact gynecological diagnosis. No such course exists at present in America, so far as I know; but provision can, no doubt, be made for it, if demanded. The law of supply and demand is operative here as elsewhere.

There is no method of treatment more profitable and more satisfactory to the bulk of gynecological patients and physicians alike than massage, provided that those qualified to practice it have acquired the necessary knowledge and skill.

It must, of course, be understood that massage, however good, should not be used to the exclusion of other non-operative gynecological measures. The best and most satisfactory results are obtained only if *all* proper available means are employed. Massage should, therefore, be supported by medicinal treatment, electrotherapy, hydrotherapy, radiotherapy, etc., as the case may require, in order to do our fullest possible duty to our patients.

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SERIAL PLICATION OF A LARGE VENTRAL HERNIAL SAC.—Dr. Robert T. Morris (*Annals of Surgery*) describes the case of a woman, fifty-four years of age, who had a post-operative ventral hernia hanging below the pubes. Two unsuccessful operations had been done previously in the case. After freeing the skin Dr. Morris examined the contents of the sac through a small opening. Adhesions of the viscera were so extensive that it was feared that separation of loops of bowel from the walls of the sac would endanger its vitality. Serial circular plication of the sac was then made with kangaroo tendon. Each suture encompassed an area about three inches in diameter. Six such sutures applied consecutively reduced the diameter of the sac about eighteen inches, leaving its surface on a plane with the normal abdominal wall. The wound healed by primary union, although the patient had 5 per cent. of sugar in her urine before going upon antidiabetic diet in the hospital. She would have to be fitted with a supporter. Inversion of the sac with its adherent viscera had not resulted in any interference with bowel movement in this particular case.

Lotions are generally preferable to ointments in cases of eczema where there is much exudation.

A patulous os externum in a woman with metrorrhagia who has recently aborted or has been delivered nearly always implies that there are retained fragments of placenta causing the hemorrhage.

A GOOD DEPILATORY.—Dr. W. J. Robinson (*Critic and Guide*) recommends a mixture of one dram each of starch and barium sulphid and one-half dram of zinc oxid. This is mixed with a little water in a watch glass, and applied to the part to be denuded. The paste is removed after two minutes, when the hair will usually have disappeared.

SYPHILITIC MANIFESTATIONS WITHIN THE NOSE

By RUFUS B. SCARLETT, M. D., Philadelphia, Pennsylvania.

Extensive and note-worthy investigations by careful and well known observers have definitely determined the fact that the cause of syphilis is no longer a matter of conjecture, but that it is due to a specific micro-organism, viz., the spirochaeta pallida. The existence of the primary lesion within the nasal chambers is a condition of considerable rarity, and but a few cases are on record. The scarcity of the initial sort within this locality in many cases may be due, in part, if not entirely, to the activity of the nasal secretions in washing the virus beyond the zone of doing damage before definite inoculation can take place. Manifestations of this disease within the nose, however, not infrequently occur as the result of infection elsewhere on the body than through the nasal cavities; in fact, no tissue of the body is immune from the secondary and the tertiary stages of this loathsome disease and its attendant destruction, no matter where the primary infection may have taken place. The initial lesion does not have to be on the genital organs, but may present itself on the lips, tongue, or about the mouth as the result of kissing or the use of a social, but infected, pipe. The employment of household implements have been found guilty of transmitting the virus, while now and then a case is reported where the innocent have been infected as the result of improper or faulty technique in vaccination or during the act of tattooing.

As the disease appears to be no respecter of persons, an infant is occasionally a sufferer through an inherited predisposition resulting from the indiscretion at some time of one or of both parents. An innocent adult may prove a victim to syphilitic infection via the nose through the use of infected instruments, as the Eustachian catheter, or, by unknowingly carrying the infection into the nose upon the finger. A case is reported of a doctor whose pituitary membrane became infected, with subsequent development of a typical chancre, as the result of the saliva of a patient being projected into his nose while he was cauterizing mucous patches in the patient's throat. A syphilitic child was permitted to suck the nose of a wet nurse, with the result that the latter became infected and developed the initial lesion within the nasal chambers. Still another case showed manifestations of the disease in the same locality as the result of a bite.

There seems to be no choice between the two varieties of the disease; both are guilty of irreparable damage, and frequently leave a path of devastation behind, especially if the institution of appropriate treatment has been tardy or neglected. The majority of the cases of the acquired form are inexcusable, and can be prevented by a manifestation of a higher standard of morals in the individual. The innocent adult acquiring the disease and the infant contracting it by heredity are to be pitied. In the latter case it is merely the fulfillment of the old prophecy of "the sins of the parents descending upon the second and third generations."

As a rule, nasal syphilis is part of a secondary or a tertiary lesion which has followed the primary infection existing elsewhere on the body. When the initial lesion does take place within the nose, the disease manifests itself by the development, sometimes during a period of a month or six weeks, of a small papule at the point of inoculation. It is most frequently found at the margin of the alae or the interior of the vestibule, usually at a point within easy reach of the finger, and is often preceded by a few little pimples which are so common in the nostril and its vestibule.

The chancre is hard, usually round, elevated, distinctly marginate and reddish or grayish-red in color. Its first appearance may be mistaken for that of a furuncle occurring in the same locality, but with the development of distinct induration and the enlargement of the neighboring lymphatics, the true nature of the lesion can readily be determined beyond doubt. Unless the discomfort produced is marked, the medical attendant seldom observes the beginning of the chancre within the nose, as the patient is usually of the opinion that the condition is no more than a little abrasion or a crack of the mucous membrane or a small granular pimple which soon becomes scabbed.

Careful observation of the nasal lesion through its various stages of development will make one cognizant of at least three changes in appearance, which may be classified as (1) *erosive,* (2) *neoplastic,* (3) *scabbed or impetiginous.* The erosive form is the mildest

stage of the nasal chancre, and the patient seldom complains of the condition, as the symptoms are not marked. The affected surface sometimes shows a very superficial lesion; the size may vary from a big lentil to that of a finger nail. At times it is rounded, but more often oval. It has a flat appearance and is without a raised margin. The color is that of carmine red. As a rule, there is no pain, although a slight burning sensation may result when the eroded area is cleaned or scratched.

The neoplastic form may have a general papular appearance and be compared to a common sized lozenge. Its surface is eroded and convex. The centre usually projects on an average of from 2 to 3 mm. and is uniformly red, or dotted over with grayish points. It is inclined to be somewhat elastic and rather firm to the touch. The appearance may also be papulo-tubercular, differing from the papular form only in the volume of the neoplasm. This form may attain the size of a third or a half of a hazel nut, although several cases have been reported in which the neoplasm became as large as a hazel nut. It may partially or completely occlude the corresponding nasal cavity, and even project from the nostril like a polypus. Implanted on the mucous membrane this morbid growth represents a real tumor, irregular hemispherical or semi-ovoid in form, and measures from 1 to 2 cm. in diameter. Occasionally it may have the appearance of a small sized mushroom. It is red on the surface, eroded, or really ulcerated, and not infrequently may convey the impression of a malignant growth. While it is sometimes of a cartilaginous hardness, it usually imparts to the finger a sensation of elasticity.

Although the scabbed or impetiginous form is always localized near the orifice of the nostril, it is extremely difficult of diagnosis. A point of contrast to the cutaneous chancre exists. Owing to the repeated irritation as the result of being picked or torn by the finger, it is irregular and made up of scabby strata of different ages, rather than a regular laminated homogeneous incrustation as is found on the skin. As the crust formation is always of a comparatively recent date because of frequent removals, the scab never becomes very thick. For the same reason the color varies, although it is most frequently brown, but it may sometimes have a yellowish tint, or be almost impetiginous in color. Where considerable traumatism has been exercised in removing the scab, subsequent formations may be almost black as the result of the addition of a certain quantity of blood.

Later manifestations of changes in the mucous membrane will show the characteristic mucous patch. It is, also, not of frequent occurrence within the nose, but it is more common than the primary sore and usually occurs coincident with the lesions of the skin. It is usually located within the inner margin of the vestibule, upon the septum, the floor of the nose or the turbinal bodies. It presents itself as a small papule, slightly elevated above the surrounding tissue, round or oval in outline and of a bluish-red color.

As the process develops, the papule usually increases in size and soon undergoes central necrosis from without inward, resulting in the formation of a moderately shallow ulcer, which presents a fairly smooth floor and sides and surrounded by a darkish-red areola. If sections are made of the affected tissue at this stage of the disease and examined under the microscope, a marked round cell infiltration, with numerous epithelioid cells will be found. As the disease progresses and becomes more pronounced, the miscroscope will show, in addition to the elements named, giant cells and possibly the offending organism. Existing degenerative changes as the result of the pressure of the infiltrating cells and the obliteration of the nutritive blood supply will also be evident. The epithelial covering will be found to have shared in this destruction. Liquefaction necrosis soon follows and the discharge becomes foul-smelling as cartilage and bone are involved. Around the border of the diseased area where sufficient blood supply is still maintained, an attempt at organization and tissue formation is found.

The symptoms produced within the nasal chambers are usually of a chronic inflammatory nature, and occur merely as a local manifestation of a systemic infection. In the infant the symptoms noted are analogous to those of the tertiary stage in the adult. They stimulate coryza, but are more severe. The acrid discharge, which tends strongly to suppuration, results in irritation of the nose and surrounding tissues, and frequently produces a chapped appearance of the border of the nostrils. Disturbance in nasal respiration results, which interferes with nursing and consequently nutrition and proper development.

The gruesome deformities frequently resulting from syphilitic involvement of important structures of the nose should be sufficient evidence to keep every man actively on guard in order to make possible an early diagnosis of the affection, sometimes innocently acquired, and to prevent extensive destruction of tissue and a further dissemination by the prompt institution of appropriate treatment.

ABSTRACTS

CAESAREAN SECTION IN THE TREATMENT OF ECLAMPSIA.—Dr. M. B. Stokes (*Texas State Journal of Medicine*) contributes the following interesting paper:

Without pregnancy there can be no eclampsia. It would seem rational to assume, therefore, that in the treatment and prevention of eclampsia, the prompt termination of pregnancy, through the quickest possible delivery consistent with safety, is of primary importance. For those who do not believe in emptying the uterus as soon as the patient has been seized with eclamptic convulsions, neither abdominal or vaginal Caesarian section or any other rapid method of delivery, is ever indicated. But the majority of obstetricians believe that in eclampsia the uterus should be emptied as soon as possible with the minimum amount of trauma.

Granting that rapid evacuation of the uterus is the rational treatment of eclampsia, we have three methods of rapid delivery from which to choose:

(1) Manual or instrumental dilatation of the cervix with extraction by forceps or version or both.

(2) Vaginal Caesarian section.

(3) Abdominal Caesarian section.

Seven cases, the histories of which I wish to read at this time, furnished the incentive for the investigation that resulted in this paper and are recorded for the reason that each illustrates a point in the argument I present.

The first two cases occurred during the latter part of my interneship; the last five occurred in my own practice.

Case 1.—Italian, Para III; children all living and apparently normal, though all were delivered by forceps after long, hard labors. At term convulsions began, recurred every fifteen minutes with no return of consciousness between. Her physician attempted to deliver her by manual dilatation and forceps, but failed and sent her to the hospital. Against his own convictions, in the light of that history, the attending obstetric surgeon finally yielded to the husband's pleadings to have a Cæsarian section performed instead of a caniotomy. A male child with a very large head was quickly delivered, but considerable time was required for resuscitation. It lived six hours. The mother died on the seventh day, of sepsis. There were no convulsions after delivery.

Case 2.—Primipara, near term. Convulsions began at midnight. Forceps unsuccessfully attempted after manual dilatation of a rigid cervix. On removal to the hospital a generally contracted pelvis was discovered. There were two convulsions after entering the hospital. By abdominal section the mother was delivered and returned to the ward in forty minutes. She had no more convulsions but died on the third day of sepsis and shock. The child lived.

In these two cases, Caesarian section had to take the credit for deaths that rightly should have been attributed to the traumatism, exhaustion and infection the women had been subjected to before entering the hospital. In these two cases Caesarian section was used as an operation of second choice, or last resort.

Case 3.—A primipara at eight and one-half months; no medical attendant until I was called to ascertain the cause of a pretty general edema and failing vision. While I was still in the house assisting in the preparation for a hot pack, she had her first convulsion. She had three convulsions with no return of consciousness before the pack was ready. Diaphoresis was assisted by a small dose of pilocarpine; an attempt to control the convulsions was made by the use of veratrum and morphine, by needle and chloral by rectum. The patient perspired profusely for two hours and had only one convulsion during this time. Immediately following the pack she was catheterized and but one-half ounce of urine obtained. It contained much albumin and many casts.

Half an hour after removal from the pack she had another convulsion. Then preparations were made for a forced delivery. The child was alive; the cervix was hard and she had had no labor pains. With the greatest difficulty the cervix was dilated instrumentally and manually. By podalic version a dead child was delivered, the whole process taking two hours' time. Both the cervix and perineum were badly lacerated. After delivery the patient was placed in a continuous hot pack, but as soon as the effect of the anaesthetic wore off, convulsions reappeared and the patient died in coma.

In this case the mother would probably have died whatever rapid method of delivery had been chosen. It was one of those fulminating cases of eclampsia that almost surely go on to a fatal termination, whether anything is done for them or not. In this case abdominal Caesarian section would very probably have killed the mother as soon or sooner than the eclampsia alone, but there was a chance, by this operation, to save the life of the child and a very small chance, possibly, of saving both mother and child. As I now recall the difficulty of that delivery and the condition of that mother after delivery, I cannot believe

that an abdominal Caesarian section would have produced as much trauma and shock as did the vaginal delivery.

Case 4.—A primipara at term. At the seventh month she began having a little albumin in the urine, but no casts, slight edema of the feet and some impairment of vision. The blood pressure at this time was 140 mm. Diet, rest in bed and three hot packs, cleared up the trouble until the last calculated week of her pregnancy, when all of her symptoms recurred in much more violent form. The urine was diminished in quantity and contained albumin and casts; the legs and feet were edematous and the patient began suddenly to have a severe vertical headache. The blood pressure was 180 mm. and the vision markedly impaired. Hot packs and the usual medical measures reduced the blood pressure to 140 mm. and greatly improved her general condition, but unless persisted in to a degree almost unbearable by the patient, the medical measures did not prevent a recurrence of all her symptoms.

The child was alive, the pelvis normal in size, but the cervix was hard. The mother of the patient stated that she had one daughter to die of eclampsia. In view of the family history and the fact that I had been unable to control, but temporarily, symptoms which clearly pointed to the oncoming convulsions of eclampsia, Cæsarian section was decided upon. Except when the measurements were being taken, and later, when determining the condition of the cervix, no vaginal examinations were made. I felt reasonably sure that it was a clean case, and therefore suitable for an abdominal hysterotomy.

Under ether, preceded by a hypodermic of aseptic ergot, the usual Cæsarian section was performed. Both mother and child survived the operation. Both subjective and objective signs disappeared.

In this case abdominal Caesarian section was used before convulsions began, as an operation of first choice.

Case 5.—E. C., age 14, primipara, eight and one-half months. On account of edema of the feet and eyelids, I had been carefully watching the urine and blood pressure. Both remained normal. On March 8, at 11 p. m., while looking after case 4. in the same institution, I questioned the patient carefully in regard to any abnormal subjective symptoms, for I had examined the urine at 4 p. m., and had found a little albumin and some casts. She said she felt perfectly well. At ten o'clock the next morning she had two violent convulsions She had one more convulsion after being placed in a hot pack. The blood pressure before resorting to the pack was 184 mm. Pack repeated in afternoon with good results each time. The patient was clear mentally and had no headaches. Next day she felt perfectly well, although albumin was still present in the urine. Blood pressure was 135 mm., and although feeling very well she was kept at rest in bed. March 8, at 2 a. m., after a five day interval of freedom from convulsions, she had a convulsion. On reaching her I found she was in labor, finished dilatation manually and delivered her easily with low forceps, although she had five more convulsions, with no return of consciousness, before I finished. After delivery she regained consciousness, but was placed in a continuous hot pack and had no more convulsions until noon, when she had three in rapid succession, became comatose and died at 4 p. m. The child was apparently healthy and lived six weeks, when it met death by violence.

I cannot suppress the feeling that had this girl been delivered surgically in the interval between her two sets of convulsions, while she was feeling so well, she very probably would have been saved. But I was thrown off my guard by her apparently good physical condition during those five days between seizures.

This case clearly shows the treacherous nature of eclampsia. I thought her prompt response to treatment good evidence that the medical management would control the situation and I waited with the result as given above.

Case 6.—W. C., primipara at term. She had been usually well all during her pregnancy. On a Thursday she awakened complaining of a headache. A specimen of her urine showed a heavy ring of albumin, but no casts. I had examined her urine on the previous Monday and found it normal. The blood pressure Thursday at noon was 160 mm. She was placed in a hot pack and perspired profusely for two hours. The headache was relieved. Pack repeated in afternoon and twice daily for two days, at the end of which time the blood pressure was 185 mm.; urine scanty and with a large percentage of albumin. Hot packs and other medical measures were continued for another day. At 11 p. m., I was called by the matron who stated that the patient was complaining of headache and impairment of vision. I ordered her to the hospital and directed that preparation for abdominal section be made, because: (1) the cervix was hard, (2) the pelvic measurements were barely within the normal and (3) because I had been unable to control medically a condition which clearly pointed to oncoming eclampsia.

By the usual abdominal section, a large child was delivered, which lived. The operation occupied 40 minutes. There was a good deal of coughing and strangling during the early part of the administration of the anaesthetic. A few hours after delivery a general edema was noticed in the patient, an irritating cough soon developed accompanied by a frothy, pink sputum, and the respirations increased in rapidity. She died in a few hours of edema in the lungs. At the time of her death the general edema had increased enormously.

Whether the edema of the lungs was precipitated by the ether or whether it was a part of a rapidly progressing anasarca, I do not know. I was willing to grant that the operation was indirectly responsible for her death, but this would be no argument against Caesarian section in this case, for any other method of forced delivery would probably have produced the same result. In fact, I doubt in this particular case, if any other method of forced delivery could have been accomplished

so quickly and easily and with as little trauma and shock. If any reliability can be placed in the conclusions arrived at by my study of this subject, criticism is in order for delay in operating on this patient.

Case 7.—E. B., primipara. At about the third month she began having edema of the feet and legs. From this time on the urine was examined from one to three times a week. It remained normal until on Monday near term, when it showed albumin. Examination on the Saturday previous showed no albumin, and the blood pressure was 144. On Monday blood pressure was 160. On the following Thursday finely granular casts appeared. Thursday evening, the blood pressure was 174 mm., and there was slight headache. She was sent to the hospital. In my opinion conditions were getting worse in spite of the usual medical management. I contemplated vaginal section, but the examination showed a small vaginal orifice and one inch of hard cervix. As the quickest possible delivery with the least trauma was the desideratum, the abdominal route was decided upon. Both mother and child survived the operation and subjective and objective symptoms disappeared. Uneventful recovery.

With these cases as an incentive, an investigation of reported cases was undertaken to determine, if possible, the status of abdominal Caesarian section in the management of eclampsia and whether the advantages of this operation outweighed its dangers. It seemed to me that these questions could best be answered by a study of the results in cases in which it had been employed and a comparison of these results where other methods of rapid delivery had been used. But I soon found I had to deal with the world-old unreliability of medical statistics. Facts, figures and opinions did not jibe.

In order not to weary with too many figures and isolated opinions, I wish to simply state my conclusions following my investigation. I appreciate that in so doing I am only giving still another opinion, but perhaps the composite view I am attempting to give may be of value in stimulating individual thought on the subject. My conclusions represent the results of an unprejudiced inquiry into the actual value of abdominal Caesarian section. They are based upon a study of the eighty-five cases of abdominal Caesarian section undertaken in eclampsia, as recorded by J. T. Williams, and the five hundred cases recently recorded by Ruben Peterson.

If there is any one fact in abdominal Caesarian section that stands out more certainly than any other, it is that this operation performed on an already infected woman is almost sure to prove fatal. From his investigation, Peterson believes the mortality for antipartum eclampsia treated by abdominal Caesarian section can be reduced 5 per cent if careless or frequent vaginal examinations and prior attempts at delivery from below, be eliminated.

Another fact brought out by the 500-case series is the evil of procrastination when dealing with eclampsia. In 30 cases operated upon immediately after the first convulsion the mortality was 16.6 per cent. On the other hand, in 89 cases where operations were delayed until after from 6 to 30 convulsions, the mortality rose to 30.3 per cent. This high mortality was largely due to the fact that, like our earlier operations for appendicitis, the operation was performed only in extreme cases, and usually then as a last resort.

To put it in the virile language of Prof. Peterson.

"When it is clearly understood that delay is dangerous and that the uterus must be emptied by the method best adapted to the case at hand, then and only then will marked improvement be seen in the mortality of antepartum eclampsia. And just so long as we compromise by treating the patient medically after she has had a convulsive seizure and is still undelivered, only emptying the uterus as a last resort, just so long will the mortality be high. I have very little sympathy for a doctrine which would not be considered a moment if it were not obstetrics we were dealing with. Who today advocates that appendicitis be treated medically until the patient is in a dangerous condition from sepsis? What would be thought of him who based his opinions of what can be done surgically for such patients upon what is accomplished by late operations? Yet is that not exactly what is being done today by the advocates of the conservative medical treatment of antepartum eclampsia? Try elimination first after the patient has had a convulsive seizure, try hot packs, sweating, active catharsis, veratrum viride, try everything and anything while the eclamptic toxins are still being elaborated within the maternal organism, and when the patient is becoming worse, when she is about to die, empty the uterus. When one protests against such irrational treatment and proves conclusively that under early operative treatment the mortality is greatly lessened, the reply is that many unnecessary operations have been performed, that the patients would have recovered if treated less radically. The trouble has not been in excessive radicalism. We have not been radical enough in the presence of this most dangerous obstetric complication, if by being radical is meant the immediate putting out of commission the factory where the poisons are being elaborated. Failure of the operative treatment of eclampsia is due to delay, to unskillful work from below or to unavoidable sepsis when the work is done from above."

In closing, I wish to state that if my own very limited observation has been accurate and if my conclusions have been fair and reasonable, as I analyze the results obtained by skilled operators in the field, there is an increasing tendency toward confidence in ab-

dominal Caesarian section as the operation of choice in cases of eclampsia at or near term, with a rigid primiparous or scirrhous multiparous cervix, whether there is any obstetric indication or not.

The results from this operation have so improved during the last five years as to force us to greatly alter our opinion about its safety, for in that time the mortality has been reduced from 48 per cent to 25 per cent. Any operation for eclampsia giving mortality of 25 per cent has a right to be considered, but it is not intended by this paper to convey the idea that every eclampsia should be subjected to abdominal Caesarian section, for the cases reported and statistics analyzed show that those patients for whom the operation is considered must be carefully selected cases.

For cases up to the eighth month, vaginal section is the operation of choice; in fact, abdominal Caesarian section will rarely be indicated before this time, since in the earlier months vaginal section is quickly performed and there is less risk of sepsis. After the eighth month, the technical difficulties of this operation are considerable, especially in primipara. Its performance also requires a considerable degree of skill and experience in vaginal operating, more time than the abdominal route and at least two assistants. On the other hand, abdominal Caesarian section offers certain advantages in eclampsia that are obvious; its physical ease of performance, simplicity of technique, rapidity of accomplishment, avoidance of tears of the cervix and rupture of uterus and the smaller amount of shock.

If I have been able to read correctly the signs of the times in surgical literature since 1908, there will in the future be performed many more abdominal Caesarian sections than now, for the relief of true and threatened eclampsia. For after all is said and done, the mortality is still 25 per cent, a pretty high rate for any operation and the question naturally follows: Is it possible that in dealing with eclampsia by abdominal Caesarian section the mortality rate is going to be lowered by adopting this operation as a preventive measure in this disease? In the future are obstetricians going to be better paid so that they will take the time and pains to keep in closer touch with their patients, so they may see the warning signs of eclampsia in time to prevent the explosion? If it is true that abdominal Caesarian section in eclampsia is so highly fatal in most operators' hands because of the poor physical condition of the patient, is it not rational to assume that if the operation be performed before the poor physical condition develops, the patient will have a better chance than if allowed to go on until convulsions actually develop? That question is a rhetorical one, of course, for the answer is obvious, provided the premise is correct.

CONSERVATIVE TREATMENT OF PENETRATING WOUNDS OF THE EYE-BALL.—Dr. Albert E. Bulson (*The Journal of Ophthalmology*) states that it was his experience to see and care for a large number of eye injuries, and in looking backward it seemed as though the proverbial peck of seriously injured eyeballs had been removed because conscientious judgment seemed to indicate the preservation of the eyeball without serious danger to the fellow eye was an impossibility. With increasing experience it seemed to him that some of the eyeballs that were sacrificed might have been saved. Yet in making this statement he was not unmindful of several serious as well as pathetic results, due to mistaken judgment in following conservative treatment, that had come to his attention.

He presented a brief report of three such cases with a view of elucidating the subject.

In all these cases the exciting eye showed no marked signs of improvement while under treatment for the existing uveal disturbance, and under such circumstances it would seem that without favorable progress during the first seven to ten days subsequent to the injury, early enucleation was indicated.

There was a happy mean between conservatism and radicalism when it came to a decision as to what treatment served the patient's interest best in penetrating injuries of the eyeball. That many injured eyeballs were slaughtered ruthlessly because the surgeon desired to be on the safe side, could not be doubted, but while every ophthalmologic surgeon should have a wholesome fear of sympathetic inflammation, it was his duty to consider carefully all the possibilities for both good and harm and to adopt any measures that offered hope of saving either vision or eyeball without incurring undue risk. Taking into consideration those extremely rare cases where sympathetic inflammation had occurred after a prompt enucleation, thus indicating the rapidity with which the sympathetic process might develop, he still maintained that in a large proportion of penetrating wounds of the eyeball, even in the ciliary region, we were justified in making an attempt to save the eye, not forgetting that such an eye required clinical observation and with the decision that

the condition is growing worse instead of better, enucleation should be performed at once. He was also strongly of the belief that mercury and sodium salicylate given internally and carried to the physiological limits, and the subconjunctival injection of a solution of cyanide of mercury, greatly aided in the prevention of sympathetic inflammation. Hexamethylenamin also might be employed with possible benefit.

As an example of cases that at the time of injury might have been considered appropriate for enucleation, the following case was reported.

Case 4, F. L., male, aged 17. Brought by family physician for enucleation. Gave a history of being struck in the right eye with a ten penny nail flying from the hammer of a fellow workman. The nail penetrated the eyeball and was pulled out by the patient. Patient was seen by him two hours after the injury. The eye presented an irregular wound about three millimeters in length extending backward from a point about two millimeters from the sclero-corneal junction. A small bead of vitreous and a button of iris presented. Vision nil, as the anterior chamber was full of blood. The button of iris was very carefully crowded forward with a sterile spatula, the edges of the scleral wound touched with tincture of iodin, and the conjunctiva slid over the wound and stitched. Patient put to bed and given ninety grains of sodium salicylate per day. An uneventful recovery resulted and with correcting lenses vision of 20-20 was regained. At no time was there any marked injection or tenderness of the eyeball, and the favorable result had continued now for considerably over a year.

Two similar cases were cited.

In the management of these cases of penetrating wounds of the eyeball several things were worthy of consideration. If there had been considerable loss of vitreous in connection with injury of the ciliary region, enucleation or one of its substitutes was indicated. The same was true of extensive injuries of the ciliary body, iris and lens. Injury to eyes that were already the seat of a pathological condition were also more likely to require immediate removal. Injuries accompanied by the retention of a foreign body in the eye-ball formed a group of cases that should be managed according to well established rules.

Scleral stitches were not only difficult to place in the edges of a punctured wound, but were unnecessary if the conjunctiva was slid over the wound and carefully stitched. Furthermore, the conjunctival flap had a tendency to prevent secondary infections which were a prolific cause of mischief in trauma cases. He was a firm believer in the efficacy of tincture of iodin or 25 per cent of trichloracetic acid touched to the wound edges, and unless iodin had been used he dressed with bichlorid ointment all of his operative cases.

The patient should be put to bed and kept there for a week. A calomel cathartic, followed by large doses of sodium salicylate, acted beneficially in preventing untoward results. Hexamethylenamin in large doses was also of possible benefit, although its irritating effect upon the urinary tract must be taken into consideration. The development of pain, tenderness and increased congestion was an indication that progress was not satisfactory, and if those, or any one of those symptoms continued, the eyeball should be enucleated. Generally the fate of the eyeball, according to these rules would be known within ten days or two weeks following the injury. No chances should be taken in a uveal inflammation of traumatic origin.

SOME CASES OF DISEASE AFFECTING THE PYLORUS AND NECESSITATING GASTRO-ENTEROSTOMY.—Dr. George P. Newboldt (*The Medical Press*) writes as follows:

This paper is largely based upon notes taken of cases in which I have performed gastro-enterostomy. In the majority of instances posterior gastro-enterostomy was performed and only in my earlier cases did I perform anterior gastro-enterostomy.

After-histories are of the greatest value, more especially in clearing up doubtful points in diagnosis, and in no cases are they more valuable than in patients upon whom gastro-enterostomy has been performed.

I wish to mention some points bearing upon disease of and in the neighborhood of the pylorus, and the first I shall consider is this—that nowadays pyloric obstruction is easily diagnosed, always bearing in mind the existence of such conditions as "dilated œsophagus," "hour-glass stomach," and growths in the first poprtion of the small intestine, usually the jejunum. Now, the obstruction may be caused by the ulcer itself, by a malignant growth, or by the ulcer causing matting of the adjoining structures and kinking of or at the pylorus. I am not going to discuss the pyloric stenosis of children.

With regard to the conditions mentioned, I must plead guilty to having done a posterior

gastro-enterostomy some years ago upon a patient who had a dilated œsophagus. Nowadays, when a bismuth X-ray is quite a *sine qua non*, this mistake could hardly occur. I took the diagnosis given me of dilated stomach as correct. In this case the man, æt. 52, had stomach trouble for years, vomiting his food soon after he had taken it. His stomach was dilated, and the obstruction was supposed to be at the pylorus, but no X-ray was taken. On January 12, 1909, I did a posterior gastro-enterostomy. His stomach was dilated, and my note says: "There is a mass in his pylorus which is very hard in one place." Two days after operation he commenced coughing, and ten days later he died. *Post-mortem*, he had evidences of old tubercle; his pleura was very adherent on the left side; he had a hugely dilated œsophagus, full of food, with a narrow cardiac orifice blocked by a piece of bread; his pylorus was thickened, but not so markedly as at the time of operation. He died from double pneumonia.

Hour-glass stomach, according to Dr. Holland, is far commoner than we usually suppose, and it is always well to bear this in mind. Perhaps one of the best results I have had was in the case of Mrs. J., æt. 40, who had suffered for many years from pain and vomiting coming on several hours after taking food. An X-ray examination showed an hour-glass stomach. On August 10, 1909, I operated on her, and found a small stomach, with an ulcer in the lesser curvature which had caused hour-glass contraction. I pared the adjoining sides of the pouches and united them, making a small but useful stomach. This woman nearly five years later is stout and well, and I invariably receive some article of diet on the date of her operation and on other feast days.

Now we come to cases resembling pyloric stenosis in which there is a growth of the small intestine high up.

I think these cases are rare, and I have only met with one myself; but in the *British Medical Journal* for Jan. 17, 1914, one appears in which the growth, an endothelioma of the jejunum, produced symptoms suggestive of pyloric stenosis. The growth was situated eighteen inches below the duodenojejunal junction, and as a result of back pressure the stomach was twice the normal size.

In my patient a tumor was felt in the right iliac region. The man, aet. 32, had suffered from symptoms of dilated stomach, and I was asked to perform gastro-enterostomy on the afternoon on which I first saw him. I opened him in the middle line: his stomach was dilated, but I could not find the first portion of the jejunum. I therefore cut down over the lump in the right iliac region, and removed a growth of the small intestine, doing an end-to-end suture. He did well, but I have been unable to trace him. The operation was performed on June 26, 1907. The growth was a sarcoma of the jejunum. In three cases I have operated for dilated stomach, caused by inflammatory conditions involving the pyloric end of the stomach and adjoining parts, and in two of these I performed gastro-enterostomy; the third did not need it. In the first case the man, aet. 58, had symptoms of pyloric obstruction, and also of gall-stones. At the operation I found an inflammatory mass involving his duodenum, pylorus, and gall-bladder; the latter was full of stones. I did a posterior gastro-enterostomy, leaving the gall-bladder alone, and he was in good health some years later. My idea was to deal with the gall-stones at a second operation if they caused inconvenience. He was operated upon on January 21, 1908, and I have since heard from Dr. L. Morgan that he has had attacks of gall-stone colic, so that it would have been better if he had submitted to a second operation. The stomach condition is quite satisfactory.

In the second case a young woman was sent into the Southern Hospital suffering from constant vomiting. She had been operated upon for perforated gastric ulcer some months before. On opening her abdomen I found that her pylorus was adherent to the anterior abdominal wall on the left side, so that her stomach was doubled on itself. By freeing the adhesions and sewing over the raw surface a cure was obtained.

In a third case, I operated upon a man for chronic appendicitis. It was a difficult case, and there were many adhesions involving the cæcum and ascending colon. Ten months later stomach symptoms commenced. On opening his abdomen I found the pyloric end of his stomach fixed by dense adhesions to the right side of his abdominal wall. I separated it, and then did a posterior gastro-enterostomy in the usual way. The result was favorable.

My second point is the difficulty of diagnosing the nature of the growth in some cases even when it is exposed by the surgeon. When a patient aet. 30 or thereabouts comes and tells us that he has pain after food, that he vomits large amounts of fermenting food and that he is relieved by the vomiting, that he is losing flesh, and that blood has been noticed in his

stool or vomit, we conclude that he has a duodenal or pyloric ulcer causing obstruction to the exit of food from his stomach. If, in addition, we can feel a lump, our diagnosis is pretty certain to be correct. A bismuth meal will show that the food does not leave the stomach as it should, and our diagnosis of obstruction in the neighborhood of the pylorus is readily made. We have not, however, got at the nature of the obstruction; it may be simple or it may be malignant, and we very often cannot make a definite diagnosis—at least, judging from the failure of men of repute to do so. In support of this contention I quote the case of a man, aet. 39, who was allowed to leave one of our hospitals with a diagnosis of cancer of the pylorus, and told that nothing could be done for him; this was in 1904. He had alump the size of an orange in the region of his pylorus and obstinate vomiting. On the off-chance of relieving him I did an anterior gastro-enterostomy. He put on weight rapidly, and when I saw him ten months later the lump could not be felt and he was working as an engine-driver. I take it that every test was applied in this case, as he was under a capable and scientific physician, but the diagnosis was evidently wrong. Now, I maintain that there are a certain number of cases in which, even after the stomach contents have been examined, even after a laparotomy has been performed and a section made of the glands or growth removed, yet a wrong diagnosis is arrived at. It is most important from the surgeon's point of view to have a diagnosis made at the time of operation, for the following reasons: (1) It is much easier to remove a pyloric growth the first time the abdomen is opened and before the gastro-enterostomy is done than to do it as a secondary operation. (2) You may never get a chance of doing it as a secondary operation. On the other hand, there are advantages in delay, for a patient on the verge of death may pick up sufficiently to stand the somewhat severe operation entailed by removal of the growth. Again, the growth may disappear. Quite recently I operated upon a man who had had a posterior gastro-enterostomy performed for supposed pyloric carcinoma. When, however, I came to remove the growth I found it had shrunk to half its original size, but there were endless adhesions as a result of the gastro-enterostomy. I contented myself with freeing these, and the man did well. It was most instructive to notice how quickly the lump disappeared after the gastro-enterostomy. It was the size of a Tangerine orange, and it practically disappeared in six weeks' time. The nature of the growth is difficult to diagnose in some cases even when it is exposed by the surgeon. Whilst looking over some papers the other evening I came across the pathological report on some glands removed from a case of supposed pyloric cancer. The gland was reported to be malignant. This report was dated October 19, 1909. Now the woman is, I understand, quite well at present—at any rate, I saw her in August, 1912, nearly three years after a gastro-enterostomy had been done, so that the diagnosis was wrong, for if the growth had been malignant the woman would have been dead long ere this. This case shows how difficult it is to diagnose the nature of a mass involving the pylorus. At the operation the gall-bladder was adherent to the pylorus, the pylorus to the liver. The pylorus was thick and hard, and there were several large glands between the stomach and the curve of the duodenum. Where the evidences of inflammatory trouble are as marked as in this case, the probability is that the condition is an innocent one. Dealing with probabilities, a pyloric mass in a patient up to the age of 40 is very likely innocent; after that period there is a likelihood of its being malignant, but we know that patients of 71, 73, or 75 may be affected with simple ulcer. In fact, a man, aet. 73, was admitted under my care with a perforated gastric ulcer from which he was dying. *Post-mortem* the ulcer was quite a simple one. But, generally speaking, old age is in favor of malignancy, and it is most common between the ages of 40 and 60. I often wonder how long a patient may suffer from an ulcer of the stomach before it becomes malignant. I think the condition may go on for years. Take the old chronic ulcers of the legs which used to be so common, and which are still to be found in our infirmaries; they rarely become malignant. But most of us have seen cases in which carcinoma has at length developed. I have under my care at present two cases of burns in which carcinoma has developed. I should think much the same thing occurs in the case of the stomach, for ulcer is undoubtedly very common. Again, the ulcer which produces an hour-glass constriction must have existed for a long period before it produces the well-known condition, but very few are malignant. As an instance of the long duration of ulcer of the stomach, I mention the case of a woman, aet. 42, who was admitted under my care in the most emaciated condition—she really resembled an "Indian famine victim." There was resist-

ance of the upper part of the right rectus, but I thought I could detect a tumor which varied in size. The bismuth meal did not leave the stomach for eight hours, and had not all gone in twenty hours. She vomited incessantly. Her history dated back for twenty years, but during the last year she had been worse and had wasted rapidly. The diagnosis was a malignant pylorus. I did a rapid posterior gastro-enterostomy, removing a gland from the lower border of the stomach, which proved to be malignant. The mass itself was very soft, and about the size of an orange. The lesser curvature was scarred, and had evidently been the seat of old ulceration lasting for years. The liver was papulated with soft nodules. Apart from the condition of the patient, the growth was inoperable, and one could only regret that she had not come for operation five years earlier. No doubt this class of case will disappear with time, just as enormous tumors of all sorts have become rarities. The advance of surgery has made the necessary operation comparatively simple. As far as the gastro-enterostomy went, the woman never turned a hair. I may here say that it is, in my experience, wise not to manipulate a malignant growth of the stomach any more than is absolutely necessary, otherwise a severe hæmorrhage may follow.

A supposed simple case may turn out to be malignant. That we must not be led away by the youth of the patient recalls to my mind the case of a woman, aet. about 30, whom I operated upon for some intestinal trouble, apart from a gastro-enterostomy she had had done in London. I felt a tumor in her pylorus; it felt soft, and the mere handling of it made it bleed—in fact, the hæmorrhage which followed the operation nearly cost her her life. She got over her operation, but I heard that she died from cancer of the stomach a year later. In this case and the last one the growth felt like a soft mass through the stomach wall, and was evidently very vascular; it had not the firm, consistent feel of the pyloric ulcer.

Is it worth while doing gastro-enterostomy for malignant disease of the stomach? I think it is—firstly, because there is a chance that the diagnosis is wrong; and, secondly, because the operation usually gives relief, if only for a short period. In one of the first cases I did, the vomiting stopped and the man lived for six months and was fairly comfortable. This was an anterior operation. Since that time I have done several cases with relief to the patient from the constant vomiting. Two of these cases were practically acute, inasmuch as the vomiting was so continuous as to threaten life.

About four years ago a man, aet. 41, was admitted with a hughly dilated stomach and with a pulse of 120. He vomited three pints of fluid, and five more were washed out; his pulse then dropped to 90. There was a question as to whether he might not perforate, so I operated upon him, doing a posterior gastro-enterostomy. He had a duodenal ulcer, and an inflammatory mass bound his pylorus down. It was a very difficult operation, but he did well and is well at present. His son consulted me only the other day with symptoms pointing to duodenal ulcer, so it evidently runs in the family.

I have been able to find the sections of two cases supposed to be malignant, in which the patients have lived for over four years since operation. These sections were submitted to Professor Beattie, who thinks them innocent. The condition is one which occurs in chronic inflammation of the pylorus, and is rather puzzling until one becomes familiar with it. I think Alexis Thomson pointed this out at Edinburgh some years ago, and it rather confirms the view of most surgeons that in pylorectomy for malignant disease the prognosis is distinctly unfavorable, and that the cases which have survived for many years have probably been innocent in nature. The following is a good instance of this class of case:—

Mrs. R. was sent to see me on account of a lump in her abdomen, accompanied by constant vomiting. She was aet. 37, and had suffered from indigestion for twenty years. She had been informed by a specialist in Glasgow that she had a floating kidney. On examination she had a dilated stomach, and in her epigastrium a lump could be felt the size of a Tangerine orange, which could be pushed across the abdomen from side to side. I advised her to submit to operation. An X-ray confirmed the diagnosis. On October 26th, 1909, I did a pylorectomy and then a posterior gastro-enterostomy. She did well, but developed a small gastric fistula, which I closed on November 28th, 1911. The fistula did not develop until ten months after her first operation, and was caused by the silk working out. In July, 1913, she was well, and is still well now, more than four years after her first operation. I looked upon this as a successful operation for malignant disease of the pylorus, but now feel sure that the growth was not malignant. This case has impressed me very

much, as the lump was so definite, and at the time I was convinced it was carcinomatous. Glands were also affected.

What is the value of the supra-clavicular gland enlargement? I always look for it, but only remember one case in which it was present at a comparatively early stage.

I should like to mention a case in which I did a posterior gastro-enterostomy which gave me no end of trouble and anxiety. He was a man, aet. 26, with duodenal ulcer, and I did the usual operation, but did not close the hole in his transverse meso-colon. The operation was on February 22nd, and on April 26th I re-opened his abdomen, as he was constantly vomiting. I found the whole of his small intestine in the lesser cavity behind his stomach. The intestines were empty, and it was not until they were reduced that I could find the anastomosis opening; this I enlarged, and closed the hole in the meso-colon. He continued vomiting, and on May 7th, as he was rapidly going downhill, I again opened his abdomen. Everything was matted, and whilst exposing the anterior surface of the stomach it tore open. Taking this as a hint, I did an anterior gastro-enterostomy, as it was evident the posterior opening was not acting. He slowly recovered. I saw him two years later. His weight had increased from 92 lbs. to 137 lbs. His only complaint was that bile regurgitated the first thing in the morning, but he could eat meat and potatoes, and felt better than for the last six years. Moral: In doing a gastro-enterostomy do not omit the smallest detail.

After-treatment should be carried out, but usually is not; and in one of my patients, a horse-dealer, the reckless manner in which he lived caused ulceration of his opening and hæmorrhage eighteen months later, from which he died. Another man told me that after an operation for perforated duodenal, followed by a gastro-enterostomy, he went to the Isle of Man and tried how much he could eat, but he is still in good health.

In one of the last cases in which I did a posterior gastro-enterostomy the patient was aet. 71. The ulcers felt hard, and the pylorus was fixed; the liver felt normal, and no glands were evident; hydrochloric acid was present. As far as I can see only time can reveal the nature of the growth in a case of this sort. Consequently, it behooves us to be very cautious in our prognosis, for we are very liable to be mistaken.

Abcess Originating in Pilo-Nidal Sinus.—Dr. Louis J. Krouse (*The Lancet-Clinic*) concludes his paper with the statement that "for the development of this rather singular lesion, the following elements are necessary:

"1. The presence of a congenital dimple.

"2. Abundant pilous development; hence adult age, and almost of necessity the male sex.

"3. Insufficient attention to cleanliness; consequently its subjects, as a rule, must be persons of the lower class, and the affection one met with in hospital or dispensary rather than private practice."

Goodsall and Miles, in their work on diseases of the rectum, devote an entire chapter to the subject under the heading of "Sinus Located Over the Sacrum and Coccyx": "As one of the results of suppuration in the neighborhood of the rectum, a sinus is sometimes formed over or near the sacro-coccygeal articulation. In most of these cases there is, as a rule, no connection whatever with the rectum, but occasionally the burrowing may extend to the rectum and open there. An opening through the skin in the neighborhood of the sacro-coccygeal articulation is always either present or indicated by a scar. That these cases are not so rare as the literature of the subject shows, is, we think, proved by the fact that seventeen cases have come under observation within a period of fourteen years. The disease consists of one or two external openings, a main sinus and lateral burrowing. The external opening closely resembles that of an ordinary ano-rectal fistula, and has been mistaken for it. The usual seat of the primary opening is from half an inch to one inch to the left of the sacro-coccygeal articulation, though sometimes it may be exactly over it. In other cases, it may be situated quite an inch above the articulation. The second opening, when present, is usually from one to two inches nearer the anus than the first opening. The main sinus passes both upward and downward from the external opening. It may extend upwards to the level of the posterior superior spine of the left ilium, and downwards as far as a point midway between the anus and the tip of the coccyx. From the main sinus, lateral burrowing usually takes place. The offshoots are generally about one inch and extend outwards, either transversely or obliquely, toward the buttock. They are chiefly confined to the left side of the middle line, although in one case there was lateral burrowing on the right side. This disease occurs during the third and fourth decades of life, and that there is nearly always a clear history of an injury

to the part." In the seventeen cases reported, eight occurred in women and nine in men.

Earle, in speaking of postanal dimples, says that "they consist generally of a cylindrical depression, which looks upward and backward, and ends in a blind sinus, varying in depth from one to several inches, or there may be a simple depression without any sinus. They are lined with true epithelium and contain sebaceous glands and hair follicles."

Most writers on diseases of the anus and rectum do not even mention this malformation nor do they mention any disease arising from it. Inflammation of these sinuses must be differentiated from inflammation affecting the sebaceous glands of this region, as well as from fistulous tracts leading to dead bone and from true fistula-in-ano. In this connection I wish to report three cases of this affection which have fallen under my observation in the last few years. All of them occurred in men of adult age—one was twenty-five years old, another twenty-eight years, and the third was forty-five years. Only one of the three had a hairy skin. All of them occurred in private practice and all were of cleanly habit.

Case 1.—M. L., aged about twenty-eight, presented himself with a painful swelling, located in the median line. Inspection showed a dimple at the lower border of the swelling, from which a small bunch of hair protruded. This opening was situated about one to one and one-half inches above the anus in the median line, and permitted a small probe to pass readily in an upward direction to extent of about one inch.

Case 2 occurred in a man of light complexion, forty-five years of age, who claims that he had been suffering with this trouble for over ten years. He had been operated upon repeatedly by different surgeons and the disease would always reappear.

Case 3 was in a man of dark complexion, aged about twenty-five years, who has been suffering for over two years. In this case one noticed two abscesses, both discharging pus, located one on each buttock on a level with the sacrum. These abscess cavities communicated with each other across the median line. In the furrow between the nates, and on a plane inferior to the abscess cavities, there was a fistulous opening about one inch from the anal orifice, from which protruded a small bunch of hair. This was the external opening of a sinus, which permitted a probe to pass upward to the depth of about one and one-half inches before entering the abscess cavity. At the time of the operation when this main tract was excised, a second sinus was detected, which led from this main sinus in a direction opposite to that of the original one, going downward and slightly inward in the direction of the anal canal, but lying directly in the median line. From this portion of the sinus specimens were made for miscroscopical examination.

All of these cases were treated differently. In the first case the sinus was cut open along its entire length and the lining membrane was stitched to the skin so as to produce a gutter. In the second, the tract was laid open and the entire canal was thoroughly curetted; and in the third, the probe was introduced into the sinus, which was dissected out with the probe in position, the parts being subsequently approximated. The last case was somewhat different from the two preceding ones in the fact that there was a second sinus, springing from the main tract, which branched off in an opposite direction and terminated near the anus. That these cases are due to a fault of development of the fetus is proved by the fact that the microscopical examination of the sections of the sinus showed its lining to be identical in structure with the true skin, having all the attributes of that tissue, namely, a basement membrane covered with stratified pavement epithelium, sebaceous glands and sweat glands. No hair follicles could be found. Notwithstanding that hair follicles were not detected in the microscopical specimen it does not necessarily follow that they were not present in the sinus.

Exophthalmic Goiter.—Dr. R. S. Fowler (*The Medical Record*) states that in preparing patients suffering from this condition for operation and also from goiters of other types which present or have presented an overactivity of the gland, it is especially desirable that the fluid in the tissues be conserved. For this reason purging is contraindicated and for several days before the operation a large amount of water should be ingested. On the evening before and on the morning of operation a colon irrigation is given. Patients who have had the slightest dilatation of the heart should not be prepared for general but for local anesthesia, for the reason that in the hands of the most skillful anesthetist a slight accumulation of mucus in the bronchi might put too much strain on the already dilated heart. Iodine is not used to prepare the skin as its absorption might cause an increase of thyroidism. For the same reason antiseptics

are not used at the operation. One-half hour before the time set for the operation, morphine sulphate, one-fourth grain, and atropine sulphate, one one-fiftieth grain, should be administered hypodermically. The operation should not be performed during an exacerbation of the disease. Lately there has been presented a method of anesthesia which fulfills important indications, namely, rectal ether anesthetization. For the prevention of fear on the part of the patient which would set up an acute hyperthyroidism and the necessity of avoidance of any further burden on the heart through excessive mucus, rectal anesthesia is indicated. Complications are prevented by keeping from the patient the knowledge that she has been operated upon. The tissues are also furnished with a large amount of fluid to wash the blood free from the toxins or whatever substance has been thrown into the blood by traumatism to the gland and by traumatism set up through mental effect. In these cases it is well to give hypodermoclylsis with 500 to 750 c.c. immediately after operation. In case the Murphy rectal drip is not retained on account of intestinal relaxation, repeated hypodermoclysis should be used (250 to 500 c.c. every three hours) in case hyperthyroidism develops. All patients are given fluids by mouth as soon as anesthetic vomiting has ceased, and a return is made to normal diet as quickly as the stomach will tolerate it. The immediate mortality under proper precautions is low. In the author's clinic there were three deaths in the last fifty cases. Ordinary goiter should have no mortality unless the tumor is of extreme size or presents cancerous degeneration. Exophthalmic cases always present an element of risk when brought late to the surgeon. For this reason they should be kept under observation until the time comes when the hyperthyroidism is at the lowest ebb. That is the time for operative interference and the method of operation should be as judiciously chosen.

INDICATIONS FOR THE WATKINS OPERATION IN THE TREATMENT OF UTERINE PROLAPSE.—Dr. Charles T. Souther (*The Lancet Clinic*) contributes the following:

1. The patient should be past the menopause or it should be agreed that a future pregnancy should be made impossible by proper treatment of the tubes during the operation.

2. A degree of cystocele to the extent of bulging from the vagina should be present.

3. The uterus should present some degree of prolapse.

4. Any degree of prolapse of the uterus up to and including complete procidentia is an indication for the operation.

5. Certain types of retroversion with cystocele and decensus in patients at or past the menopause.

The contraindications are:

1. An operator should be capable of handling any emergency that may be met in vaginal work and should be thoroughly familiar with practical details of a vaginal hysterectomy before attempting this operation.

2. Complicating fibroids are best dealt with through the abdominal route.

3. Ovarian tumors and tubal complications should be dealt with through the abdomen. Yet Duhrssen, Wertheim, and others have removed large ovarian cysts and intraligamentous cysts through the anterior vaginal celiotomy.

4. When the condition of the cervix is suggestive of cancer the operation can very easily be converted into a hysterectomy.

The Preparation of the Patient.—All cases should spend several days in bed and have the vagina thoroughly cleansed twice daily. All ulcerating surfaces should either be allowed time to heal or be treated with boroglyceride tampons and local applications of tincture iodine until all infection has subsided and all odor has been eliminated, and raw surfaces are covered with healthy granulations. Another great advantage of complete rest is that the edematous uterus has time to reduce in size and is very much easier to handle. A preliminary curettement is not a bad idea in many of the old long-standing cases and should be done one or two weeks before the time of the curative operation.

When ready to operate the uterus should be grasped with two tenaculæ and pulled down and all the vaginal and uterine surfaces well painted wth tincture iodine and given time to thoroughly dry before beginning the cutting part of the operation.

Description of Technique.—All vaginal work:

Step 1.—An inverted T incision is made with a transverse part on the anterior part of the cervix below the bladder attachment to the uterus, the vertical part of the incision extends from the middle of the transverse incision vertically up to one-half to one inch of the external meatus urinarius and through the mucous membrane and fascia down to the bladder.

Step 2.—This forms two triangular flaps of mucous membrane and vaginal fascias that are reflected one to the right and one to the left. Spurting small arteries and veins should be ligated with small, plain catgut, and the flaps reflected well out to each side to or near the plexus of veins running up the side of the uterus.

Step 3.—Now by blunt dissection separate the bladder from the anterior surface of the uterus and open the abdominal cavity at the reflection of the vesico-uterine peritoneum. A forceps should be allowed to remain on the bladder side of the peritoneum.

Step 4.—Introduce two fingers into the peritoneal cavity and gently enlarge the opening in the anterior culdesac so the body of the uterus can be drawn through.

Step 5.—With your finger or tenaculum forceps or a hook over the round ligament gently deliver the uterus through the opening.

Step 6.—Cut off the excess of tissue in the two triangular flaps made by reflection of anterior vaginal wall in Step 2.

Step 7.—Attach the bladder peritoneum (yet on a forceps) to the posterior side of the uterus at the cervico-corporeal junction (or near it) by two or three stitches to prevent a coil of intestine becoming interposed.

Step 8.—Close the vertical incision by sewing the triangular flaps to the anterior aspect of the body of the uterus, beginning at the urethra or upper end of the vertical incision with interrupted chromic catgut, No. 2, twenty-day. The bladder now sits on top of the uterus.

Step 9.—Close the transverse incision but not entirely, allowing for drainage.

Step 10.—Replace the uterus high in the vagina and put in a tampon.

Step 11.—Do a very careful and extensive perineorrhaphy.

THE EFFECT OF THE HYPODERMIC INJECTION OF ADRENALIN CHLORIDE SOLUTION.—Dr. W. Miller (*The Lancet*) writes on this subject as follows:

This note is based on the experience gained by treating during the past two and a half years 11 cases, 8 of spasmodic asthma and 3 of hay fever, with hypodermic injections of adrenalin chloride solution. Four of the patients were males and seven were females, and the ages ranged from 6 to 35 years. The injections were given once a week, and usually numbered eight or ten, but in one case 58 were given. The doses were small, varying from 10 minims of 1:15,000 to 10 minims of 1:5000 solution.

My general conclusions are as follows. About one minute after the injection the patient may complain of a feeling of oppression and sometimes of faintness; there is marked pallor, and the pulse as a rule increased to 110, being small and slightly irregular, and may attain to 130 per minute. These symptoms pass off gradually in from three to ten minutes, the patient grows comfortable, recovers color and a pulse of good volume, which becomes slower by some ten beats per minute than before the injection, the slowness continuing markedly for some hours.

There are, however, considerable variations from this general story, not only in different individuals, but also on different occasions in the same patient. Thus:—

(*a*) Two patients showed no immediate effect.

(*b*) In a lady aged 25, after an injection of 10 minims of 1:5000 solution, the pulse remained small, rapid, and irregular for three hours, and there was no second stage of slowing and steadying. She felt and looked very ill, and it was some days before she recovered. There was no obvious heart lesion, but the pulse was normally small.

(*c*) A man, aged 34, was little affected by the first injection (10 minims of 1:5000), but after the second (10 minims of 1:5000) and third (10 minims of 1:10,000) the pulse, although increased only in rate about 15 beats per minute, became very irregular and remained so for quite 20 minutes. The drug was therefore stopped.

Intravenous injection produces startling results. It occurred accidentally on two occasions with the same patient, a lady aged 33, who was receiving weekly injections and responding in the usual way. On the first occasion the pulse before the injection was 85 per minute, regular, but soft. Ten minims of 1:5000 solution were injected under the skin of the forearm. No vein was noticeable at the site punctured, but on withdrawing the needle a drop of blood followed. Within a few seconds the face and lips became ashen and the patient leant back in her chair murmuring that she felt very ill. Respiration was quick and shallow, the pulse very small and so rapid as to be uncountable. She remained in this state for four or five minutes before improvement was noticeable. After about 15 minutes she was better, but felt rather shaken; the pulse was then 78 per minute, of fair volume and almost regular. On a second oc-

casion an attack of asthma was just commencing; the pulse was 100 per minute. Ten minims of 1:10,000 was given and a drop of blood followed the withdrawal of the needle. Again the same symptoms followed, but although the pulse was not countable, her condition was not so alarming, and after about three minutes began to improve. Within five or six minutes she was quite comfortable, the pulse 80 per minute, regular, and of good volume, while the respiration was normal.

I have never given a series of large doses (e. g., 10-20 minims of 1:100 solution) for asthma, but I have given occasionally a single one for other conditions without noticing any initial lowering of the blood pressure. A colleague, however, who used the drug in a bad case of spasmodic asthma, accompanied by mitral disease, gave 10 minims of 1:1000 solution, which immediately relieved the breathing. He repeated this dose on two succeeding days, with the result that the patient's condition became extremely critical owing to delirium cordis. A week later, the heart having recovered and the asthma returning, he gave a single dose, but the heart symptoms followed at once.

The result in asthma is not cure, but temporary relief. That the injections may be utilized to enable other treatment to take effect was indicated by one of my 11 cases. A girl, aged 7, had suffered since the age of 2 from occasional attacks, which had gradually become more frequent and lengthy until they occupied three or four days of each week. There was enlargement of the bronchial glands. The usual remedies had no effect, so injections (10 minims of 1:10,000) were given once a week for 58 weeks, during which time general treatment was adopted for the glands. At the end of this time there had been no attack for three months, and since then (July, 1912) there has only been a return on a few occasions when the paptient had colds. I do not attempt to generalize from so small a number of cases; I only indicate the points suggested: (1) the difference in the immediate effect of large and small doses is in accordance with physiological results; (2) individual variation in susceptibility may be great; (3) possibly a condition resembling anaphylaxis developps in some cases—for example, Case (*c*) and the case whose notes were sent me by a friend.

THE SHAPE OF THE FETAL SKULL IN CASES OF CONTRACTED MATERNAL PELVIS.—Dr. Henry Walcher (American Journal of the Medical Sciences) calls attention to the familiar fact that in primiparæ, having contracted pelves, where the pelvis has sufficient capacity to permit the child's head to enter, that the head is usually deep in the pelvis at the end of pregnancy. This often develops as early as six weeks before the beginning of labor. In these cases the actual expulsion of the child is frequently rapid. The cranial bones are pressed under each other less than in some other cases, and the configuration of the fetal skull at birth is a close reproduction of the shape of the pelvic cavity. An exact mold of the fetal head soon after birth gives an accurate reproduction of the pelvic shape.

Menorrhagia due to retroflexion can be corrected by reposition of the uterus to its normal position. This is best done by the use of a Hodge or Smith pessary.

CALOMEL AS A GERMICIDE

J. F. Schamberg and J. A. Kolmer, Philadelphia (Journal A. M. A.), while investigating the germicidal activity of chrysarobin, found it necessary to devise a technic for testing substances which were insoluble in water. The technic of this is described. In their experiments they were surprised to find that the germicidal quality of calomel was much greater than had been supposed. Naturally they first though that this might be due to some included mercuric chlorid, or that the hot agar or some chemical in the culture-medium might have changed the calomel to a soluble salt; but careful and repeated chemical tests and experiments have disproved this. Moreover, when calomel suspension had been shaken mechanically for an hour at 42 C. (107.6 F.), and filtered through a Berkefeld filter, the filtrate did not possess germicidal activity. A table is given showing the germicidal power of 0.01 gm. calomel suspended in 100 c.c. of a acacia solution against the **Staphylococcus aureus.** Similar effects were noted with cultures of typhoid and colon bacillus. They say: "We have no explanation to offer of the mechanism of so high a germicidal activity of a substance insoluble in water. On first thought it would be supposed that each particle of germicide must come in actual contact with each bacterium; but this explanation can hardly hold when 0.00005 gm. of calomel spread out in 10 c.c. of agar in a Petri dish or in a bouillon completely inhibits or kills the cocci contained in 0.1 c.c. of a twenty-four-hour bouillon culture." They also give a table showing various other germicidal substances, using calomel as a standard. The one main difficulty in using the calomel suspension in the acacia water is the fact that sedimentation begins within from half an hour to an hour. If, however, the suspension is prepared in a bottle it can be easily shaken just before use and can be injected where needed. As is possesses a germicidal activity equal to that of mercuric chlorid, there seems to be hope of its being useful in the disinfection of various cavities.

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EMPIRICISM.

Empirics are found among men of whom better things should be expected. Medical men who from one cause or another degenerate into quacks and victimize the gullible public.

If ours were the only profession which is annoyed and disgraced by empirics, we might have still greater cause to complain; but among lawyers there are pettifoggers, and unprincipled damage-case hunters who proceed to persecute employers; and ministers who are one-horse chaplains! The lawyer and minister work publicly, but the physician in private, and his rascally imposture is not discovered; he can work the ignorant public with his arrant quackery. If there is anything of which the public is ignorant it is the nature of ills and the claims of medicine. A stealthy empiric in the medical world is not as honorable as a street faker.

It requires but a very limited knowledge of medical science to enable a charlatan to talk above the comprehension of the average person, and the success of the pretender in getting the ear and the confidence of the masses is no secret, or marvel. Many educated, regularly graduated physicians practice some sort of imposture. We have glowing prognosticians, who know there is no grave illness, but cases of mild character are magnified for the sole purpose of piling up an unnecessary bill. A physician who imposes on a patient by creating unnecessary alarms is virtually a pickpocket! Article One, of *National Code of Ethics,* says:

"A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying his importance in the treatment and cure of disease." D. L. F.

SURGERY OF THE SPLEEN.

On the basis of 66 cases B. Finkelstein (Muenchener med. Woch. No. 26, pp. 1471, 1914) finds that the operative treatment of stab and incised wounds of the spleen shows a mortality rate of about 20 per cent while shot wounds show a mortality of 50 per cent. Removal of the spleen is only indicated where there is extensive laceration of this organ. As a normal procedure either suturing or tamponade must be taken into consideration. The mortality rate in lacerations of the spleen is not higher than 20 per cent and in this condition as well as in spontaneous rupture the spleen must, as a rule, be removed.

Operation in splenic abscess is of good prognosis; the best method is the transpleural. The prognosis in operation for echinococcus cyst of the spleen is also good, but where the organ must be extirpated owing to extensive destruction of the splenic tissue, the mortality rate is fully 20 per cent. Good results are obtained in non-parasitic inflammation of the organ (mortality 10 per cent). Extirpation of the spleen when it is the seat of new-growths carries with it a mortality rate of 20 per cent, nevertheless; a lasting cure is obtained in exceptional cases.

Extirpation of the spleen is of great service in Banti's disease, leukemia and in a certain stage of malaria by means of which the seat of production of noxious material is eliminated from the body. In a certain number of cases of chronic ascites of malarial origin extirpation of the spleen acts favorably. Extirpation is contraindicated in very strong adhesions of the spleen and in deep changes of the parenchymatous organs.

CLINICAL VALUE OF THE ADHERHALDEN REACTION IN PSYCHIATRY.

Hilfert and Rosenthal (Naturhistorisch-medizinischer Verein, Heidelberg, May 5, 1914). The investigations comprised 160 cases, of which 62 were of dementia præcox (38 in men, 24 in women). Of the 38 men, 3, i. e., 8 per cent, were negative with all organs (brain, thyroid, testicles(, while 4 cases gave positive reactions with all organs. Twenty-six cases reacted positively with at least one organ. Doubtful reactions were encountered in 9 cases, i. e., in 22.5 per cent. In 9 cases there were positive reactions with two organs. In the remaining 13 cases a positive reaction was merely noted.

Among the 24 women suffering from dementia præcox 8 per cent were negative with all organs. A positive reaction with three organs was more frequent among the women (25 per cent) than among the men (9.5 per cent). There seemed to be a considerable difference between the males and females in regard to the reaction-proportion of the genital glands. Of the men 58 per cent and the women but 12 per cent reacted negatively with the genital glands.

Of 20 cases of manic-depressive insanity examined in 10 there was no positive reaction, in the others the reaction was doubtful. In 4 cases in women (climacteric depressions) there were reactions in 3 of them with ovary in the fourth with brain. In hysteria, paralysis, organic epilepsy as well as in other destructive processes of the brain no reaction was observed.

The investigation showed that the serologic findings alone are of no diagnostic significance.

OBSERVATIONS ON ARTIFICIAL PNEUMOTHORAX.

Zink (Beitr. z. klin. Tuberkulosis, Bd. XXVIII, 1914) describes his experiences with artificial pneumothorax in 110 cases, of which 109 were tuberculosis and 1 case was bronchiectasis. In 81 of the cases there could be obtained an effective pneumothorax. Among these were severe cases with complications, fever, tubercular enteritis, haemoptysis, pleural exudation. Complete collapse of the lung was obtained 35 times; in 46 cases there were adhesions which prevented collapse. In 16 cases the disease became aggravated. All the other cases gave some hopes for a result. Sixty-seven of the patients were sputum-free; 29 patients were bacilli-free. Zink, from his investigations, could not be convinced that perfectly healthy lungs could be harmed by collapse for any length of time.

Artificial pneumothorax is indicated in chronic destructive and fibrous processes and in continuously progressive infiltrative diseases, and in severe, acute infiltrative or caseous pneumonic forms. In isolated lower lobe tuberculosis the result is very doubtful and hence the indication must be regarded with great care. The contraindications are active tuberculosis of the other lung, emphysema, asthma, organic cardiac or renal diseases. Laryngeal tuberculosis is not particularly a contraindication.

THYMIN IN EXOPHTHALMIC GOITRE.

As has been the general experience of most observers, R. Hirsch (Deutsche medizinische Wochenschrift, XXXIX, 1913) has also found that Basedow's disease is quite rare in children. Moreover, he has found that children are rather tolerant to thyroid preparations. These facts suggested the use of thymus gland in patients suffering from hyperthyroidism, and the preparation used was thymin. Two tablets of 0.5 gm. were administered daily. In 12 cases the author has found that this treatment was very encouraging. The main point is that the thymin seems to have an elective action on cardiopathies of thyreotoxic origin. It seems also to have an hypnotic action, as the sleep of patients with hyperthyroidism was improved through its administration. Particularly in two patients with diabetes insipidus in whom the sleep was disturbed by the necessity of drinking and urinating, the administration of a thymin tablet in the morning and another at night promptly relieved this inconvenience and they were able to sleep all through the night. In neurasthenics, also, two tablets at night have produced perfectly restful sleep in patients who otherwise were suffering from insomnia.

HILAIRE BELLOC is well known in America for his delightful essays, piquant humor, and brilliant historical achievements. In the September *Cenutury* he begins a series of six vivid scenes from the French Revolution, his purpose being to make the reader grasp them as if an eye-witness. The series opens with the council round the king at Marly on the famous Night, the nineteenth of June, 1789.

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PROGRESS MADE IN RADIUM AND X-RAY THERAPY

By RUSSELL H. BOGGS, M. D., Pittsburgh, Pa., Roentgenologist, Allegheny General Hospital; Dermatologist and Roentgenologist, Pittsburgh, Columbia and St. Francis Hospitals.*

While the value of radium and X-ray therapy has been a subject of wide controversy in the medical profession during the past few years, it may be definitely stated that radio-therapy has been steadily gaining ground. In Europe the non-operative treatment of malignant growth has been the absorbing topic of the day, ever since the meeting of the Gynæcological Congress at Halle, when a few physicians of national reputation took the stand that operative interference in cancer is only justifiable in cases where slight operations are required and then rayed. Where a severe or extensive operation was necessary, many advised against operation and advocated massive radio-therapy, meaning a combination of radium or mesothorium and X-ray. In regard to the comparative value of radium, mesothorium and Roentgen rays, Professor Bumm concluded that all are equally valuable therapeutic agents and that good results can be obtained with each when properly applied. There is a struggle now going on between the adherents of gas and electricity, and as fast as one progresses, the efforts of the other party to overtake its rival become more active. Therapeutic results of radium and X-ray are very similar. It must be remembered that the radiation from each is complex and results not only vary with the quantity and quality, but also with the nature and thickness of the filter and with the density, depth and composition of the tissues irradiated. Unfortunately, the rays from each have been hitherto considered as a more or less homogeneous and constant application, whereas there is great difference between low or high penetrating rays whether given off a radium tube or an X-ray bulb. The lowest penetrating and most active rays given off radium are stopped by one thickness of ordinary writing paper, and highest gamma rays will pass through thick sheets of lead. With a certain quantity of radium placed on the skin without a filter a superficial reaction would be produced with a short exposure, while if the rays were filtered through some substance which would cut off the low penetrating rays no reaction at all would be produced. But if the exposure were of long duration, a deep reaction would also be produced. What has been said in regard to low and high penetrating rays of radium will apply to low and high penetrating X-ray. A low penetrating X-ray with the proper exposure will take a picture of a hand but will never take a picture of a hip, no difference how long the exposure is made.

The radiations from radium are known as A, B and Y, or gamma rays. In using the emanation for treatment we may consider that we are using chiefly A-rays, as they predominate over the B- and Y-rays; nevertheless, the B- and Y-rays may have an effect out of proportion to their amount. It is the high penetrating B- and gamma rays which are used in medicine and the physiological action is almost identical with the X-ray. Some of the gamma rays of radium are higher than X-ray given off an ordinary tube, but the new Coolidge tube now placed on the market gives a much higher penetrating ray.

It has been suggested that for a certain class of rays, whether given off radium or the X-ray tube, "gamma therapy" should be used. Hence, the first consideration for accuracy of treatment is to know the quality and quantity of the agent used. Many of the radium workers are scarcely familiar with radium and know nothing at all about the proper use of the X-ray, while most of

*Read before Ohio Valley Academy of Medicine, June third, nineteen hundred four, Bellevue, Pa.

the Roentgen-therapeutists know nothing about the real value of radium therapy. The radio-therapeutist must use both if he is going to do all kinds of therapy and be familiar with each. He must know how to get the greatest quantity of the proper kind of radiation on the diseased tissue in the shortest time without injuring the adjacent tissue.

To illustrate: In treating a growth in the uterus by X-ray, when the radio-therapeutist places a pastule on the skin and one near the growth, if the former has reached an erythema dose and the latter only reads one-eighth of an erythema dose, then he must ray the growth through at least eight ports in order to give a full erythema dose. The same applies to radium or mesothorium. Everyone using these agents must fully appreciate this statement and carry it out in treating any lesion deeper than the skin. At present radio-therapy includes more than a single agent, and everyone treating all classes of cases should not only be familiar with X-ray but also with all radio-active substances.

In some of the German clinics results from radiation have been such as to result in the actual abandonment of operative procedure for carcinomata of the uterus. In a paper which I read before the Grand Rapids Academy of Medicine, January 21, 1914, I described the work done by the German Gynæcologists and their results with radium and X-ray in the treatment of cancer of the uterus.

Out of the one hundred and eight cases of cancer of the uterus, treated by Professor Bumm, fifteen had recurrences, and when it is considered that only forty of these cases were operable, this would constitute a splendid result if the period had been several years. However, it must be said that two-thirds of these cases have been under observation only less than a half year. Bumm states that he always uses the Roentgen rays in conjunction with the mesothorium. He prefers the use of the radio-active substances to influence the local carcinomatous growth, using the high penetrating X-rays on the adjacent tissues. He states further that if there is no advancement over what can be done today, even then radio-therapy makes a good step forward in our fight on cancer. The work done in the clinics of Czerny, Döderlein, Koenig, Menge and many other surgical clinics fully justifies the above statement made by Bumm.

Stern states that Czerny and Werner at Heidelburg are doing very good work with their combination of enzytol, mesothorium and Roentgen-therapy. They have treated about six thousand cases within the past ten years. Werner's opinion at present is emphatic that all operable cases should be operated upon as soon as possible and then rayed. He says that the men who stopped operating are going through the same process of enthusiasm that he went through some time ago. He feels sure that time and experience will bring them back to the fold.

At the Surgical Congress in Chicago last fall I had quite an interesting talk with Koenig and Gauss in regard to their treatment of carcinoma with mesothorium and the X-ray. Stern, who has recently visited Frieburg, makes the following statement in a recent article in the Medical Record: "The stand the Frieburg School takes on the operative interference in carcinoma, as told to me by Gauss, is as follows: Where only a very slight operation is required they operate and then ray; where a severe operation would be required, they never operate but only ray. Natives who can be kept under a long supervision are never operated upon, only rayed. Foreigners who can remain only a short time are often operated upon and then rayed. They generally combine the mesothorium with X-ray treatments."

In the Journal of the British Medical Journal, December, 1913, there is a very clear account of the work done by Dr. Seuffert, Döderlein's first assistant. Dr. Seuffert reported that one hundred and fifty-two cases of carcinoma of the uterus and cervix had received the treatment. One-third of these were also treated with the X-rays, and none of them were treated by radium only. The clinic in Munich, he reports, used only small doses (50 to 100 milligrams) which were inserted for twenty-four hours at a time. Of one hundred and fifty-two cases, one hundred and three were inoperable, and the increased admission of inoperable cases was undoubtedly to be dated from the time of publication of the radium treatment. The beneficial results of the rays were demonstrable in every single case. Since February, 1913, Dr. Seuffert reports there has not been a single case of uterine or cervical cancer operated upon at Döderlein's clinic. A large proportion of the one hundred and fifty-two cases were still under treatment, according to the report, but

for the present thirty-one of these have been regarded as successfully treated, and have been discharged. These results are truly remarkable when it is remembered that ten of these thirty-one cases, he states, had been labeled inoperable on admission. Dr. Seuffert informed his hearers that at a recent meeting of the heads of the Bavarian gynæcological clinic at Munich, Professor Döderlein had demonstrated twenty-four of these thirty-one apparently cured cases to the satisfaction of all present; in none of them could a recurrence be established. In one remarkable case in which the primary growth had deeply involved vaginal mucous membrane, and in which the pelvis was filled with secondary tumors, the whole mass and the vaginal ulcer had seemingly disappeared completely four weeks after the radium had been applied.

During the past six months I visited Dr. Howard Kelly in Baltimore, and saw a number of cases, learned the history of many others, as well as inspected photographs taken before and after treatment. The writer also visited Dr. Abbey several times in New York, and, while the technic of each one using radium is somewhat different as well as the selection of cases to be treated, each had obtained some brilliant results.

I have been impressed with the fact that many who are not familiar with the actual value of the X-ray do not realize that results can be produced by the X-ray similar to those obtained with radium.

The early results with radium in France were obtained only on superficial growths, using no screens, with small quantities of radium. In 1907 an important step in advance was made by employing filters of one-half millimeter of lead, gold or silver, which cut off the low penetrating rays. The rays which penetrate such filters are not nearly so active, but, when applied for sufficient length of time, act on the normal malignant growth with greater intensity, without injuring the overlying tissues. It was later, that Wickham and Degrais, by using the ultra-penetrating rays with filters up to a thickness of three millimeters of lead, securing a pure gamma radiation, were able to effect deep-seated growths. It was by the use of proper filters and larger quantities of radium, thus giving massive doses, that they were able to destroy deep carcinomatous tissue. However, nearly all of the German gynæcologists prefer to use radium or mesothorium to influence the local carcinomatous growth, and to use the high penetrating X-ray on the adjacent or neighboring tissue.

The Frieburg technic, with slight modification, which they have been using in the treatment of fibroid, has been almost universally adopted in the treatment in deep-seated carcinomata; that is, by applying the radium locally to the growth and treating the adjacent tissues with X-ray through as many different ports of entry as possible.

The radium, applied locally, with sufficient intensity, will destroy cancerous tissue to a depth of 2.5 cm., but beyond 5 cm., Bumm states, that the cancerous lymph glands are not affected. However, it is only in the advanced cases of carcinoma of the cervix that the growth is thicker than 2 cm. This shows the advisability of treating with radium from within outward and by X-ray by cross-firing method from without inward.

I have been using X-ray in the treatment of malignancy for over thirteen years and radium for almost six months. During this time I have treated cancerous growths affecting almost every organ of the body, but if it had not been for the advanced technic of some of the German gynæcologists and roentgenologists, I believe today that I would have abandoned the use of the X-ray in the treatment of malignant growths of the uterus, although I have seen marked inhibitory effect on the growths and the patients obtained great relief from pain. Today the use of radium, with the proper cross-firing method, as well as the new Coolidge tube, has made this field of therapy very promising, to say the least. At present, I have three inoperable cases of carcinomata of the rectum which have shown great improvement under radium combined with the X-ray. One patient had been unable to sleep without the use of opiates, and even then he had not had a full night's sleep for a month, before treatment was begun. At present he has no pain, the growth is reduced in size, the discharge ceased, and he has gained in general health. However, a cure can hardly be expected on account of the disease being so far advanced.

During the past ten or twelve years I have treated a large number of mammary carcinoma as a prophylactic measure after operation, some cases in which the improve-

ment made operation possible and other cases in which the carcinomata was so extensive that the radiation could be considered only as a palliative measure. I have taken up the subject of "The Roentgen Treatment of Carcinoma of the Breast" and later "Malignant Growths" before the American Roentgen Ray Society. A full description with results may be found in the transactions of the society. The importance of raying the chest from all directions, the so-called cross-fire method, can not be too strongly emphasized. During the past six months, in addition to the cross-firing in treating mammary carcinoma, whether treated as a prophylactic measure after operation, or, in advanced cases, to render operation possible, I have been using radium in the axilla and over the super-clavicular glands, producing a marked reaction through sufficient filters to get deep effect. While the time is too short to state anything definitely, I believe this will greatly assist X-ray therapy. It is difficult in a vast majority of cases for the patient to hold the arm up over the head, exposing the axilla long enough to give sufficient radiation to produce the desired deep effect.

The treatment with X-ray and radium during the past two years has shown sufficient results to justify the surgeon discontinuing operations in cases of surface carcinoma and mucous membrane easily reached. In the other cases operations, followed up by systematical raying is still considered the best method of treatment.

I believe the X-ray or radium should always be considered first in the treatment of epithelioma because, when properly given, all epithelial tissue in the skin can be made to disappear and there are fewer recurrences than by any other method. It has been my experience that the rodent ulcer tissue yields more readily than the squamous cell carcinoma, but in the skin, squamous epithelioma may be destroyed by radiation with definite certainty. As a rule I prefer X-ray to radium in the treatment of epithelioma whenever accessible, not because it cannot be treated equally successfully with radium, but on account of the less expense. Until last year, I have been advising the removal of lower lip epithelioma, then ray the adjacent glands intensely. But at present, I believe that better results and more cures can be accomplished by radiation alone as a routine procedure. Operation, I believe, should be reserved for special cases, as an adjunct to radio-theraphy. The results obtained in advanced cases of lower lip cancer were very much superior when rayed intensely before operation. This is also the experience of others. When radiation is given it must be sufficiently intense to produce the required reaction in the desired length of time. Anyone who has not the courage to push the treatment to this point should not treat this class of cases. In these cases it is just as important to ray adjacent glands as it is the lesion.

Radiotheraphy of fibroids of uterus is a branch of medicine which has developed the malignant treatment by radio-active substances to such a high degree. In the treatment of fibroids my experience has been limited to a few cases. In an article read before the American Roentgen Ray Society, Pfahler, in the following words, gave the keynote to the exact situation:

"The use of the Roentgen rays in the treatment of gynæcological conditions is no longer a novelty. While it is the last field that has been invaded by the Roentgen therapeutist, the amount of work done has been so extensive, the number of cases treated so great, the technique so well established, that today probably holds first place in the field of Roentgen therapy. Both gynæcologists and roentgenologists in America have been slow in appreciating the value of this method of treatment. Considerably over 1,000 cases have been carefully recorded in medical literature; at least two books have been written upon the subject, and at the last International Congress of Medicine, a whole session of combined sections on radiology and gynæcology was devoted to this subject. No greater testimony to the efficiency of this method of treatment could possibly be given, and it is only fair to say that the roentgenologists were no more enthusiastic in their testimony as to the efficiency of this method of treatment than were the gynæcologists."

Koenig and Gauss in their latest series of 350 cases of fibroids of the uterus reported 100 per cent cures. No patient is considered cured until she is completely amenorrhoic. Treatment is given in series every three weeks. The number of series necessary to effect a cure is from three to six, and the length of time from three to six months. It has been proven that the ovaries and testicle are the most sensitive of all tissues of the body to the rays. It is

most likely that results in fibromata are chiefly due to this special action of the rays upon the ovaries; and, secondarily, to their direct effect upon the fibromata.

There has been a group of multiple glandular tumors treated successfully by both the X-ray and radium. Of these, tubercular cervicle adenitis is the one most commonly encountered. In the tuberculous cases, the severity of the process ranges from large, broken-down glands and large glands not broken down to glands which were almost invisible. The rapidity of results is most striking in the large, broken-down glands. It is interesting to note that these cases were just as permanently benefited as in the cases where the glands were only of small size. In comparison to the size of the gland it requires less treatment to reduce the mass in a tuberculous patient where the glands are large and broken down or about to break down. Strange as this may seem, it is true, but we are unable to account for this, unless it is due to the fact that there is so much more glandular tissue present in the large tumor which is more easily affected by radiation. There is, undoubtedly, a constitutional effect, which is most pronounced when a large amount of tuberculous tissue is rayed. These facts suggest that in the destruction of tissue an autogenous vaccine is set free. We are not justified in operation on tuberculous adenitis, many believe, as it is more than a local disease and so many cases recur after operation. Formerly cases were referred for X-ray treatment on account of operation leaving unsightly scars. Today this is not the chief reason, but it is the realization that when operated upon there is too much danger of producing a general tuberculosis. Besides, it is claimed at least 90 per cent of all these cases can be permanently cured by the first series of radiation. There is scarcely a roentgenologist who has done much work, who has not treated at least one or two hundred cases successfully. I believe the method of choice is the Roentgen ray rather than radium. Whichever is used, it is always advisable to ray the mass from as many different angles as possible and use filters.

AMELIORATION AND CURE OF CHRONIC INTESTINAL STASIS.—Dr. William S. Bainbridge (*The Proctologist*) states that nine-tenths of all cases of chronic intestinal stasis, according to Lane, would not reach the surgeon if proper attention were directed to rational prophylaxis and early treatment. Dr. Bainbridge went further, expressing the opinion that perhaps nineteen out of twenty cases may be cured without surgical intervention. In the majority, if not in all cases which reach the surgeon, the patient is a physical and nervous bankrupt, and not a good surgical risk. A better understanding of the mechanical causes of the condition would lead to a material decrease in the number of severe cases which eventually reach the operating room.

According to the theory of Sir Arbuthnot Lane, of London, who was the first to direct attention to the matter and to employ the term "chronic intestinal stasis" with reference to this class of cases, there is a general tendency to viceroptosis resulting from the assumption by man of the erect posture. This dropping of the abdominal organs gives rise to strain upon the mesentery and its attachments, and nature attempts to offset this by the formation of what Lane has called "evolutionary bands," for the purpose of supporting the viscera and preventing the ptosis. The unequal strength of these bands in certain parts, however, thwarts nature's plan and leads to unequal support throughout. As a consequence of this unequal support the bowel is held up firmly at some points, and is allowed to sag at others, with resulting angulation or kinking at the point of support. This interferes with the drainage of the tube, and the condition known as chronic intestinal stasis results.

The more severe type of cases, those which call for surgical intervention, are classed according to the particular part involved and the treatment required, as follows: (1) misplaced appendix; (2) ileal kink; (3) duodeno-jejunal kink; (4) kinking at the hepatic and splenic flexures of the colon; (5) kinking at the sigmoid loop; (6) kinking at different points, extreme cases, with many bands and diverticultitis. Dr. Bainbridge briefly described each of these, giving the treatment for each, and illustrating them with stereopticon views.

Weak solutions of silver nitrate are preferred to any other astringents in the treatment of granular conjunctivitis.

JUST "HAPPENED" WITH THE DOCTOR

By G. Henri Bogart, M. D., Paris, Illinois.

There are so many queer things to be seen in the world, if one have only the gift of realizing the absurd combined with a "nose for news."

Then, there are those of us, who having eyes, see not; I am sure that there are some things that I cannot see at all, while to others, they loom up like a flock of barns.

When I was just past my majority, I was a married man and a father, at that, I was completely disgusted with medicine; there was so much that failed to jibe with the beautiful close-fitting descriptions of the books, so few cases that measured anything near to the types, and sure that I would be a mere murder monger, I went back into the schoolroom, to make more money for farther study, and since I began that postgraduate work, I've never found a stopping place.

That was a third of a century ago, when Koch and the T. B. were mooted questions with the majority, and hailed by poor me as a mooring place for something that would not be uncertain and when school teachers did not need autos to haul home their slender salaries—couldn't have got them any way—and I was just learning that a household had to have a regular supply of cash to keep the wheels oiled. I was glad when that school closed, and immediately secured a job at my other sideline, railroading, to get the needful spondulix. Then, one night, I jumped off my wheezy engine to help the lone brakeman of the crew couple up, for that was when there were no airbrakes nor automatic couplers, nor even injectors, on freight trains.

One of the cheap cast iron drawbars smashed when I was in between and I had a side smashed too, five ribs, collarbone, breastbone and shoulderblade crushed and left lung pulped to a considerable extent so that I had a fine opportunity to study surgery at first hand, that is, so soon as I was able to study anything.

When they discharged me from the hospital, the lung had formed a habit of leaking, so much so that my weight hung around the hundred and a quarter mark for several years, before a complete recovery had been effected.

Active employment, whether at my trade, in practice, at an editorial desk, or in the social requirements of high school teaching were beyond my physical strength, while the old gray stork had served notice for me to get busier. I found a fine rural school, with a big, old house nearby, where I could live at a nominal rental, cultivate a bit of garden, cut my fuel from the "laps"—tree tops left when timber was cut—the best of all, with a big-hearted, bluff English doctor for nearest neighbor, with whom I could "ride" when I felt like it.

In that five years, I learned more of the reality of medicine than all the books and the schools ever taught me, for I discovered that men and women are not mere machines, that kindliness and humane humanness count as much as drugs, and sometimes more, that infallibility of diagnosis is not always possible nor always necessary, and that one has but to do his best; and oh, how often the unexpected happened and the best proved to be exactly what was needed.

One night, when the roads were frozen hard as iron, when a flood of glorious moonlight pulsed through the air, we were driving home from a round of the chronic cases, when the thud of hoofbeats, which we had heard for some time, came near enough for the rider to hail. He had been on our trail for more than an hour and with the breath all jounced out of him, he gasped, "Father's choking to death."

I often wonder how we managed to exist before the telephone.

Lady fairly flew, and when she stopped in the lane, before the farmhouse, the gasping of the old man was plainly audible and we hurried in, while neighbors attended to the steaming mare.

The patient was suffering from laryngeal tuberculosis but not so well developed as to account for his condition. Cold as it was, the windows were open and the fire raked down in the wide fireplace, while the patient, clad only in a homemade undershirt, was propped up, perspiration streaming down his face. His mute glare of appeal that followed us, the haunted expression of dumb, numb terror is something I can never forget.

We retired to the kitchen, turned out the women who had gathered, and the old doctor looked at me inquiringly. I hardly dared say the single word "Hysterics" when he answered, "Good, we'll relax him with chloroform."

Only a few inhalations were required, when he fell back into a gentle slumber. We learned that he had choked on swallowing some water, and that spasmodic contraction had followed. A few weeks later, when we were both absent from the community, he had a similar attack and died, a victim of fright.

Hysterics recalls another case of the same winter. A buxom miss of about sixteen, an orphan living with a farmer, had developed "fits". One day in school she had stiffened out, her legs lifting the desk from the floor, frightening the school so that I had difficulty in controlling the resultant panic.

When the performance was repeated a few days later, I sent the pupils, with the exception of the young women, from the room. The drinking water was carried from a farmhouse across the road, the well being famous for its clear, cold water. Instead of the "Common drinking cup", of which we hear so much nowadays, there was a big dipper holding more than a quart, which was kept in the bucket, insuring the return of the "slobbers". Two of the boys were sent for a fresh bucket of water and, meanwhile, I unfastened her garments at the throat; then, so soon as the cold water came, I pulled open the clothing and dashed a full dipper of the water into her bosom. The cure was instantaneous and complete, for she left in high dudgeon and the folks with whom she lived, fearing that her fits might be catching, got her a place as domestic with a merchant in a nearby village.

One bitterly stormy winter night the doctor drove to the gate and called out "Come on, that infernal C —G— has another spell and those young doctors down there have been using the battery on her. The community is scared out of their wits, so they want us both to come down."

We had lately discussed an anti-spasmodic formula from one of the journals consisting of equal parts of tinctures of lobelia, capsicum and skunkcabbage, about as sickening and acrid a combination as could be imagined. En passant, I've learned more from journals than from all the books I have ever read, or expect to read. He asked me if I remembered the formula, and I had immediate vision of something doing.

We found the house filled with anxious neighbors, and the two young doctors plainly puzzled. After an examination my colleague asked me to step across the street to the apothecary shop and compound a couple of ounces or anti-spasmodic tincture "and be sure not to reduce it."

The patient was absolutely rigid and the onlookers were guessing everything from lockjaw to brainfever. After considerable effort her mouth was pried open and the nauseating, fiery, fetid mixture poured down her throat. Action was prompt and effective.

She jumped out of the bed yelling fire, until emesis stopped her.

The cure was permanent, for whenever she started another hysteric attack, the threat of sending for us restored her immediately.

Speaking of single doses recalls Sam S—, a member of a prominent family, who had gone to the bottom through drink. One night he came into the office, telling of an obstinate constipation, that was proof against all the doctors.

The doctor had a famous prescription which the patients had dubbed "Hell-roar-um." Podophyllin 3, Calomel 10, Jalap 20, a combination which one quaint patient likened to a muzzle-loading musket, "It kicked as hard as it shot." Sam was dosed out three powders, that looked like veterinary practice in size, and told to take one on starting home, one on arrival if the first had not worked before, and the third at breakfast, if necessary.

A couple of days after we were in his village and met him looking as though he had been through the hospital.

"Hello, Sam, did those powders work?"

The expression of disgust that crossed his face was comical. "Doc, you've lost me for a patient. Before I got half way home I stopped, and I just kept camping in the fence corners, so that it was daylight before I got there. I put the other two into my vest pocket and now when I feel bad all I have to do is to look at one of 'em."

Poor Sam, the remedy was permanent, for shortly after, while drinking, he fell under a train and was killed.

A few miles away, on Howard Creek, was a settlement of squatters who worked in the timber, did grubbing and similar labor. One Sunday morning, we had been out all night and got home just as breakfast was ready, while we were eating, a lean, gawky, stoop-shouldered youth of about seventeen came in and asked us to hurry to his place "down on the crick", to attend his wife in confinement.

He was walking and, so soon as a fresh horse could be hitched, we took him on behind and drove to his cabin, a structure of poles roofed with hand split clapboards, with a protruding joint of rusted pipe as the only chimney.

The floor was of hard packed clay, and the

furniture was the most meager. The wife was a girl of sixteen attended by her mother, a slatternly, faded woman typical of her class. She greeted us with the warning, "If you don't hurry, you alls 'l be too late".

The doctor threw off his coat and without rolling back his cuffs, passed his hand under the covering and found the head on the point of exit, the presentation normal. After the delivery of the head he withdrew his hand, and holding up his arms asked me to remove his cuffs and turn up the sleeves.

The patient, as is usual with the more ignorant class of females, had been constipated during the latter part of her term, and had evidently paid no attention to her condition, so that the descent of the fetal head had forced an impacted fecal mass ahead of itself; a mass dry and hard, which had been pushed into the doctor's cuff. I called his attention to the dual delivery and he shook the offensive mass into the bed and turning to the mother said, "Madame, the patient has fecated. Will you please remove the excrement?"

She failed to understand the words and wild with apprehension ejaculated "Gora mighty, Doc, 'taint goin' ter kill her, is it?"

The doctor's face was a study for a moment, then he drew himself to his full height and, in language that is unprintable, he thundered forth the situation so that the old woman understood, as could any passerby who might have chanced to have been within a hundred yards.

The oddest part of it all was that the young father soon after came up and did a job of grubbing a sheep pasture, to pay for the services.

Mrs. B—, a near neighbor, somewhat well up in the forties, and the mother of a large family, was confined with as easy and apparently normal an accouchement as one would wish, when suddenly and without warning she went into the rigor of a puerperal convulsion.

At that time there were a few standard drugs in tablet form for hypodermic use, among which was the morphine and atropine combination. An injection was promptly administered, followed by a second, when no results were apparent; then as she still failed to respond and a fatal termination seemed imminent, a third, with the muttered remark, "She is certain to die if we don't, and may die if we do."

Suddenly as an explosion she relaxed, and passed into a state of complete narcotism. From three o'clock in the morning until ten we worked with the assistance of the woman; whisky and coffee both by mouth and rectum, friction with flannel moistened with whiskey, strychnia hypodermically, with anxious moments when neither pulse nor respiration could be distinguished, then a return of consciousness, but oh, so fluttering a spark of life.

As she was steadily improving, we left orders that she be kept utterly quiet, and drove home, about half a mile, for breakfast, then back.

As we slowed up at the hitching rack, we heard the voice of a local farmer exhorter praying by the bedside with strident and nasal tones for "This dear mother, so soon to be taken from her flock, and these dear children, so soon to be left motherless", when the doctor leaped from the buggy, sprang over the fence and by the time that I had the mare tied he was coming down the walk. pushing the struggling preacher ahead of him. At the gate, he said, "If you want to kill a woman take a knife and cut her throat, don't try scaring her to death."

The minister began talking about the worth of a soul outweighing the body and announced his intention of returning despite the doctor, when the latter shot out his fist and left the offending meddler spawling in the muddy highway.

The patient had passed into a state of collapse, so that we had a second tussle with death. She made a good recovery, but it was a long time before the community settled down over the scandal caused by the clash of professional attention, some holding that the ignorant, would-be preacher was in the right and others that he was in the wrong. The doctor would merely remark, "Well, she is alive to answer the prayer for care for her babies."

There was the case of a wood cutter's wife, mother of a dozen frowsy kids, to whom the doctor had given some pointed advice about the wickedness of her bearing more children, who brought a malpractice suit alleging that the doctor had done something to prevent her becoming pregnant, but who had another baby before the trial, a little political pull having been equal to postponement of the hearing; the pulling of teeth with the one all around forceps in the case; the fractured necks of femurs treated by extension, the foot of the bed lounge raised by bits of board, the weight supplied by little sandbags hung onto a loop of adhesive bandage stuck onto the leg and left in a free loop at the sole of the foot, while sandbags banked the limb into position;

though in such cases an agreement was signed, freeing the surgeon from a possible malpractice suit; there was the old woman, with her ideas of "sheepnanny tea" and yarb tea, to meet and to watch that she did no great harm while kept in a good humor; there were the poultice and lotion and liniment ideas to meet along with the regular practice, so that the five years were filled with active learning.

Never will I forget the first autopsy after a death from tuberculosis.

The woman died, leaving a two weeks old baby. She would not accept the diagnosis that she had consumption and asked that all the doctors in the city should unite in an examination, so that they could help some one also in a similar dilemma. She lived in a one room shanty in a nearby city. We were there on business when the autopsy was held, I being selected to do the work.

The brutal and ignorant husband watched the operation, and finally asked a couple of colored women to come in and "See what had killed Sue".

Doctor West, a strange character, tugged at his long whiskers, angered beyond expression at the heartlessness of the husband, finally said to me, "Cut off the lower end of the lung and wrap it up." Naturally, I asked what he wanted of it. "I'll take it down to Meade's and have soup made of it, that matter will make fine soup." We were relieved of our troublesome audience, who retired to the back fence and tried to vomit themselves empty, with remarkable success. Then we did take sections of that lung and mount some slides, at which we peered anxiously through the microscope, looking for "Some of that Dutchman's consumption bugs"; and when we did not find them the older fellows were triumphant in proclaiming that the theory was a fraud, nor would they believe, when shortly after, I was able to get some bacilli mounted and stained.

When I go back to those five years in eastern Indiana, and open the doors of memory for the happenings of times, absurd or comical, and again filled with deepest pathos, I am satisfied that medicine is progressing with seven league booted strides, and am glad that I can recall the days that are gone.

ABDERHALDEN'S REACTION.—H. Schwarz, St. Louis (*Journal A. M. A.*), points out certain uncertainties of the Abderhalden reaction. In the women's clinic pregnancy cases and cancer cases are always to be found; the material for preparing albumin or peptone can be obtained fresh and special precautions in obtaining and handling serum can be readily observed. The women's clinic must therefore be the training camp for research work in this field, but it is a waste of energy and material to attempt investigating other conditions and work with other organs and tissues before the investigator has learned the fundamentals of this work and tested the efficiency of his technic on the touchstone of the cross-examination of pregnancy and cancer. The serodiagnosis of pregnancy even in expert hands is subject to error on account of unreliable dialyzing thimbles, but the optic method eliminates this source of error. A peptone obtained in the market is not always reliable. It must be remembered also that a positive reaction means that the patient in question harbors placental elements, usually it means that she is pregnant. Placental elements, however, may remain in the uterus or even in other parts of the body for long periods after delivery and this is especially the case in hydatiform mole. There are also difficulties in the diagnosis of cancer. The serum of another form of cancer may give a negative reaction when the cancer used in the test is of different histologic structure. We also have difficulty in securing cancer material free from blood or infection, and sometimes it is not possible to isolate the cancer material in the affected organ. So far it has not been possible to prepare the desirable quantity and varieties of malignant albumin and out of the question with cancer peptones. Eventually this may be possible. The serodiagnosis of cancer will be of value where material for the microscope is unobtainable before serious operations, and he gives an instance where this is shown. It is of still greater value for controlling cases after radical operations and for watching for return of the disease, also for observing the effects of treatment by the Roentgen rays and otherwise. The serodiagnosis of pregnancy and cancer by these biologic reactions is already of considerable practical value, but the methods are not suitable for commercial laboratories and can be depended on only when done in research laboratories connected with a hospital service.

GLYCOSURIA IN OBSTETRICAL PRACTICE

By Archibald L. McDonald, M. D., Duluth, Minn.

In our care of pregnant women it should be the routine to examine the urine at regular intervals. There are certain pathological findings which have definite significance and give us specific information. We should have a record of the 24 hour amount, specific gravity, reaction, chemical for albumin and sugar, microscopical, and in some cases a nitrogen partition. Too frequently we are satisfied with specific gravity of a two or three ounce specimen, together with an albumin test. It should be remembered that a gravity is normal or pathological depending on the 24 hour amount; that even a hasty microscopical examination of the sediment may reveal serious conditions entirely unsuspected from the chemical findings. The standard excuse for omitting the sugar test is that the Sp. G. was low and in normal limits, but in a case recently under observation, I repeatedly obtained a positive Haines' test in specimens ranging from 1010 to 1030, which is not an unusual experience. The test in most common use is some form of the copper hydrate reduction test, either Fehling's, with two solutions, or Haines', with a single solution. Both tests are of equal value, are reasonably delicate, and will show any pathological amount of sugar. Therefore in case of a negative Haines' or Fehling's we may safely exclude the presence of any pathological reducing substance. On the other hand such a positive reduction test may have a varying significance, especially in pregnant or parturient women. It is important to remember that certain substance other than glucose will reduce the copper hydrate solution, giving a fairly typical sediment of red cuprous oxide. Some of these are: 1. Urines of high specific gravity containing much mucus, uric acid or similar sediments. These can usually be eliminated by diluting the urine to a gravity of 1005. 2. Certain drugs excreted in the urine which reduce copper and also certain drugs which affect the kidneys in such a way as to allow the excretion of sugar in otherwise normal individuals. 3. Other reducing sugars, especially lactose and pentose. Lactosuria is very common at some time in pregnant or parturient women and is frequently recorded as glycosuria. Failure to differentiate these cases, no doubt, accounts for the statements of some authors as to the great frequency of glycosuria in pregnancy and the puerperium. The finding of lactose in a pregnant woman is without significance except for the danger of its being diagnosed as diabetes. Pentose may be present independent of glucose, may precede or accompany true glycosuria. Therefore a case can not be classed as glycosuric as a result of a positive Haines' or Fehling's alone, unless confirmed by fermentation, polariscope, or phenyl-hydrazene test. Practically I believe that any urine reducing copper hydrate in a typical manner may be classed as glycosuria provided it ferments with yeast, and if these tests are negative we may safely exclude the condition.

The frequency of such findings is variously stated by different authors. Some go so far as to state that it can be demonstrated at some time during pregnancy or puerperium in practically all women. Such statements must be based on minute tests made at frequent intervals and are of theoretical rather than practical interest. Williams, in a series of 3,000 cases in which bi-weekly urine examinations were made, found true glycosuria at some time during pregnancy and puerperium in 5.8 per cent and in only about 1 per cent during pregnancy.

Having demonstrated glycosuria, we must carefully determine its significance before making a diagnosis of diabetes. On the other hand it must be considered as pathological until it disappears or is explained. It may usually be considered as due to a hyperglycæmia in which the excess is excreted in the urine. Such hyperglycæmia may be due to: 1, increase in the carbohydrate intake, transitory or diatic forms of glycosuria. 2. Possible toxic effect of the product of conception. 3. Low assimilation limit for carbohydrates. 4. True constitutional diabetes. Capricious or unusual appetite is a frequent accompaniment of pregnancy, and we may find that our glycosuric patient is taking large amounts of sugar or starch in some form. When the cause is recognized and removed the sugar should disappear from the urine. It is

claimed that in some instances the product of conception is the cause of glycosuria either through the absorption of glycogen from the placenta or fœtal organism, or through the influence of certain toxins which lower the mother's tolerance to carbohydrates. It has been clearly demonstrated that for some reason all pregnant women are less tolerant to ordinary amounts of carbohydrate than are the non-pregnant. A glycosuria can be induced in almost any pregnant woman by the feeding of from 50 to 200 grams of sugar, while the same amount would have the same effect in only 10 to 30 per cent. of the non-pregnant. It would be interesting to determine the permanency of such reduction in the assimilation limit and whether an unusual reduction could be taken to indicate a predisposition to diabetes. Finally we have a group of cases characterized by: 1. Pregnancy in diabetic women, and, 2. Pregnant women who develop true diabetes as a complication. Either of these is a grave complication, with a serious prognosis for mother and child. The maternal mortality is given from 15 to 30 per cent. in labor or puerperium with an additional 10 to 20 per cent. dying within a year from diabetes or tuberculosis, giving a gross maternal mortality of 30 to 60 per cent., largely depending upon the care with which the cases were selected in the various series reported. Probably from 40 to 60 per cent. of the babies were born alive and healthy, the rest being aborted, prematurely or stillborn, or dying within the first few days.

Practically we may put our case in one of three groups: 1, definitely diabetic; 2, simply a transitory or mild glycosuria; 3, severe glycosuria, possibly diabetes. In the case of a definitely diabetic woman becoming pregnant, the problem is a simple one as to diagnosis, and unless the symptoms are easily controlled the pregnancy should be interrupted. Possibly this is the method of choice in all cases unless the diabetes is extremely mild and the woman can be kept under strict observation. In case the glycosuria is first discovered and confirmed during pregnancy we are confronted with a different problem. A careful study should be made of a 24-hour specimen of the urine, especially as to amount, specific gravity, chemical for albumen, acetone, di-acetic or oxy-butyric acid, and quantitative for sugar and ammonia. The dietary of the patient should be carefully gone over to eliminate a possible excess of carbo-hydrate food or drugs. In case no such cause for the glycosuria is discovered, a limited or even absolute non-carbohydrate diet is substituted for a few days. This should be sufficient to clear up the milder cases due to a low assimilation limit, and if carbohydrates are then gradually increased the tolerance may be raised with no return of symptoms. Such cases as these may be expected to go on to full term with no further trouble, pass through a normal labor and uneventful convalescence. They are, however, entitled to a great deal more than ordinary care and observation throughout pregnancy and puerperium. In this group of cases the sugar rarely exceeds 1 per cent., there are no diabetic symptoms aside from the glycosuria, the ammonia does not exceed 2 grams in 24 hours, and there are no toxic substances in the urine. In the more marked cases it is found that the sugar in the urine is not controlled by diet, often reaching 2 to 3 per cent. when the patient is on a restricted or starch-free diet, and there are symptoms of a chronic progressive disease. The urine must be carefully and frequently observed for the presence of toxic substances indicating acidosis and danger of coma. The total amount of ammonia is of great importance in indicating the onset of such symptoms and in the matter of prognosis in any given case. Amounts reaching 4 to 5 grams in 24 hours are of serious import and indicate acid intoxications, especially in older people. It serves as a warning and if found early and promptly treated, the condition may be cleared up. Sodium bicarbonate in large doses frequently repeated is of great value. Cases in this group of definite diabetes or persistent glycosuria present the grave problem for obstetrical interference. In general if there is evidence of death of the fœtus, or if the symptoms are not easily controlled by careful treatment, or the patient can not be kept under observation, the uterus should be emptied by the simplest procedure. On the other hand, if the condition is easily kept within mild limits and the patient is doing well except for the glycosuria, it is probably safe to let the pregnancy go on to full term. Careful, consistent laboratory work, together with an intelligent interpretation of clinical findings is of especial importance in these cases.

PYORRHEA ALVEOLARIS, ITS CAUSE AND CURE

By H. E. Bliler, D. D. S., of Chicago, Ill.

The cumulative refinements of years are being clearly reflected in achievements in dental science and progress. You are progressing or retrogressing—did you ever think of that? It is gratifying to all of us to be classed as up-to-date—fully abreast of modern thought and action, the time having come when dental work, with artistic merit, strength and cleansing surfaces, gratifying to the dentist is imperative and being done by the great majority of conscientious dentists interested in the uplift. We will concern ourselves for the present with the above heading, being of vital importance to us all.

As a consequence of the immense amount of light thrown in recent years on the morbid phenomena brought about by the toxic materials elaborated within the organism, constipation has ceased to be regarded as a condition of trivial importance. As a matter of fact, the almost universal attitude of indifference toward constipation has given way to a keen appreciation of the grave dangers to which the retention of intestinal refuse often expose the entire organism.

Our present knowledge of Intestinal putrefactive processes and their related metabolic perversions, which are commonly manifested by toxemias of various degree of intensity, is such that we no longer regard constipation as other than a condition worthy of the most skillful and painstaking treatment. We now know that a stagnated colon bears a causal relation to a great variety of anomalies of metabolism—that it is a prolific source of functional disturbances.

There can be no gainsaying the fact that much of the confusion concerning the morbid phenomena brought about by the toxic products of metabolism is due to the widespread currency of conflicting theories and the ambiguity of those responsible for their promulgation. A more general and perfect understanding of the condition commonly designated autointoxication would now obtain had there been less theorizing and verbosity on the part of those who have attended to the subject. An unwarranted amount of perplexity concerning the morbid processes induced by the poisonous products of metabolism has resulted from a too hasty acceptance of unsound theories and a too generous use of indefinite terms; the literature on the subject of autointoxication has been weakened through the introduction of defective speculation and verbal diluents.

The skepticism with which the majority long continued to regard the whole doctrine of autointoxication is no longer in evidence; all save the most backward and stolid are now well aware of the fact that derangements of metabolism are frequently attended with the production of poisonous materials that exert a profound influence on the general economy. Indeed, it is now universally conceded that autointoxication is the underlying cause of an exceptionally large group of symtomcomplexes.

That the same bacteria of toxic matter that cause carbuncle or appendicitis and many other local morbid manifestations cause pyorrhea alveolaris, there is absolutely no question. Autointoxication (constipation) is defined as the inadequate elimination of germ-infested fecal matter, in other words the retention of toxic material, poisonous gases and bacteria, which permeate the entire system, attacking the weakest point of resistance, causing such local morbid manifestations as pyorrhea alveolaris, carbuncle, appendicitis and many other abnormal conditions. Bacteria gravitate to points of least resistance; this has been fully verified. Clinical deductions and experiment will accord with the above facts. Too many discordant theories impair our proper interpretation on questions of paramount importance.

The pharmacologist and clinician, by their diligent research work, and deductions, place therapeutics on a more rational basis. We know by experience and clinical conclusions that constant drug stimulation and elimination is indicated, and necessary, due to our epicurean habits. Just as long as we indulge in excesses, just so long are remedial agents essential to maintain healthy conditions, the excretory organs not being able to throw off all toxic matter. We know empirically, that salines, followed by a vegetable cathartic will relieve and restore systemic disturbances in putres-

cent and abnormal conditions of the entire body, and the alveolar process (pyorrhea alveolaris), but we do not know how or why. We know further, that bedside observations frequently controvert laboratory precepts, but we do not know why. Should we blindly adhere to a chain of plausible theories by depreciating and rejecting facts, because we do not know why? One must concede that scientific reasoning and correct understanding will tend to clear the atmosphere of mysticism and erroneous conceptions formed on many vital problems.

I have personally for several years been affected by autointoxication; I am strong and active, and apparently normal, with regular elimination of fecal matter. The local morbid manifestations in my case are carbuncle and pains in the appendix. In cases of occupational diseases and industrial poisoning, eliminatives are clearly indicated as remedial agents, stimulating renal activity. Herman Boeker, Ph. G., M. D., from personal experience and clinical observations, maintains that most all diseases are directly traceable to the gastro-intestinal tract—that closer attention given to autointoxication as a source of disease will solve many of the most perplexing problems in internal medicine. Neither can we have an unalterable classification of the toxics or toxemas. Bacteria gravitate to those parts in which the least resistance is met. Billroth found bacteria in small numbers in the upper bowel segment, increasing in the intestines—and the largest number in the fecal repository, or colon. The number of bacteria found in the alimentary tract is almost beyond computation in normal as well as abnormal conditions. Buchard, of Paris, lays great stress on autointoxication as the prime factor in most all morbid phenomena, favoring circulatory stasis of the liver, and causing, in a measure, morbid conditions and metabolic disturbances, as in gouty and rheumatic affections. Personal, as well as clinical experience, confirms my belief that appendicitis and carbuncle, from which we get fatal toxema—also pyorrhea alveolaris—are local morbid manifestations of gastro-intestinal poisoning and infection, attacking the weakest point of resistance—varying in different individuals. Theorists, no doubt, will take issue—but the facts remain; they are all pus-producing and tissue-destroying toxemas, and by using the same eliminatives, they all disappear (in primary stages), and normal conditions are restored. Our social relations, with excesses of food and drink, are not conducive to natural immunity from autointoxication. To maintain normal conditions, the necessity of constant cleansing and removal of germ-infected fecal and toxic matter is apparent. When in distress, look within for redress.

Causes.—Excessive eating, negligence. Excretory organs unable to eliminate all toxic, fecal matter, causing systemic disturbance and imperfect metabolism.

Symptoms.—Local, morbid manifestations are: phagdenic, pyorrhea alveolaris, sluggishness, headache, biliousness, carbuncle, pimples, languor, appendicitis, tri-facial neuralgia, and many others.

Diet Prevention.—Eat moderately, and of meat sparingly—once daily. Preferably vegetables and fruit diets—such as rice, the corn products, pineapple, apple sauce, prunes, oatmeal, cereals, whole wheat, and wheat bran occasionally, etc., avoiding pastries.

Treatment.—When any morbid symptoms appear, cleanse the gastro-intestinal tract, taking internally a saline, followed by a vegetable cathartic nightly for a fortnight—gradually diminishing the doses. Olive oil will assist, twice weekly. Repeat above treatment every three months and you will retain normal conditions, with good complexion and sweet breath. Many people rust out their vital organs instead of wearing them out.

Obesity.—This being a rational treatment for obesity, with exercise, obtaining health and vigor, by relieving systematic stagnation.

If your patients manifest any of the above morbid phenomena, or have aching teeth, without any apparent cause, such as trifacial neuralgia, apply the saline treatment, and you will get gratifying results, as I have done in many and all cases. When you cure them of pyorrhea alveolaris you also cure them of other morbid conditions and restore normal health.

Recuperative Power Gone.—When the vitality of the alveolar process is gone you cannot restore it, any more than you can restore a lung lost by tuberculosis. Remove the very loose teeth, and bridge across, and the remaining teeth will last indefinitely. The local treatment is very essential, helping materially the systematic treatment.

The reflex action of pus-discharging pyorrhea alveolaris, is very deleterious to the entire system, as we all know. Sober thought, by men qualified to speak from clinical deductions and observations, will verify my contention, signalizing a praiseworthy innovation.

I append the following cases which were affected with autointoxication, the cause of their morbid conditions, and were all cured by the use of eliminatives which illustrate my point:

Case 1. Mr. W. L. S., a young man twenty-two years of age, came to my office June first. He complained of soreness and bleeding of gums after brushing and of a very fetid breath. Examination showed an aggravated case of phagedenic pyorrhea with very little accumulation of sub-gingival calculus. The acute attack was a veritable fire, with a large pus pocket at angle of the jaw. I cauterized with H. C. L., H_2SO_4 healing it. But the same condition would appear at the opposite angle, and would keep shifting back and forth like a smoldering fire. The teeth were loose. There was no history of venereal trouble nor of any drug taking. No signs of any other disease were present. I gave him the usual local treatment with no avail. Antiseptics seemed of no benefit. After treating him for two months, I decided that I had here a systemic basis. I placed him on a tonic eliminative treatment with the result that in less than ten days all the former trouble had disappeared.

Case 2. Mrs. C., aged thirty years, giving no history of venereal taint, nor systemic diseases, came to my office with the recommendation that all her teeth be extracted. Same indications were apparent as in Case 1, the whole mouth being affected. Very fetid breath in both cases, had plethora anemia. Local treatment of no avail in either case. Case 2 referred to me by family physician. The same treatment was instituted and the result was equally as satisfactory as in the preceding case.

Case 3. J. I., age 65. Two severe attacks of phagedenic pyorrhea alveolaris, had plethora anemia. Three local treatments.

Case 4. Mr. W. L. P., age 30, severe attack of pyorrhea—fetid breath, also plethora anemia and sluggish—one local treatment.

Case 5. Miss S. M. B., Vandalia, Mo., age 30, chronic case of fetid breath. Biliousness of long standing, causing severe headache, sallow complexion, had also chlorosis anemia. No local treatment.

Case 6. W. J. M., age 25. Ashen color, sluggish, no vigor, tri-facial neuralgia, had chlorosis anemia —no local treatment.

Case 7. Mr. M. J., age 21, pimples on face of two years' standing, sluggish, no vigor, pale, no local treatment.

Case 8. Miss S., age 19, very fetid breath—anemia—teeth being kept in A1 condition, no local treatment.

Case 9. Mr. S., age 50, Chicago, fetid breath, sluggish, bad condition physically—plethora anemia —no local treatment.

Case 10. Mr. R. B., age 35, Chicago. Pulmonary tubercular patient, accompanied by plethora anemia —fetid breath, sluggish, ashen color, and also of severe coughing at night, used also with the salines, disinfecting vapor for air passages and bronchial tubes, progressing favorably.

Where the Fault Lies.—In most all diseases a thorough treatment is instituted. With autointoxication (constipation) it is different. In nearly all cases a single dose being administered, instead of taking an efficient course of elimination for a fortnight and giving constant attention, for the ailment is nearly always present, from a mild form to complications.

TREATMENT OF PLACENTA PRÆVIA.—Dr. E. McDonald (*American Medicine*) urges that delivery should follow the first hemorrhage. The ideal course in placenta prævia is dilatation of the cervix, with mild labor pains and little natural straining. For this reason, if pains are strong, particularly when an elastic bag has been inserted, it is usually well to give a hypodermic injection of morphine and atropine. As long as the membranes are unruptured the greatest safety of the mother lies in prohibiting strong pains or straining. If hemorrhage is severe, hypodermoclysis or venous transfusion should be done. When version and extraction, or other operations, must be done, anesthesia is required, and ether is the preferable agent. The indication in complete placenta prævia is immediate stoppage of hemorrhage, with little consideration for the life of the child. When the cervix is fully dilated, immediate delivery controls the hemorrhage and offers the child the best chance of life. The delivery may be done by Braxton-Hicks' version and immediate breech extraction, which should be made carefully and slowly, so as not to cause mutilation of the cervix or perineum. Extraction should immediately follow version only when the os is fully dilated, or nearly so. When the os is undilated, control of hemorrhage may be obtained in one of three ways: 1. By Braxton-Hicks' version, bringing down one foot, so that the fœtal body acts as a tampon and delayed extraction; 2. by the use of the de Ribes elastic bag; 3. by tamponage of the cervix with gauze. The author is distinctly opposed to resorting to Cæsarean section, on the ground that it but adds another greater danger to that already existing.

THE EARLY RECOGNITION AND THE PRACTICAL PREVENTION OF UTERINE CANCER

By W. S. Smith, M. D., of Baltimore, Md.

A careful estimate places the number of deaths from cancer in the United States at 80,000 annually—enough to depopulate the city of Baltimore in a very few years. When we consider the relation of our own population to that of the entire world, and think also of the number of cases that are cured, not to speak of those persons who are erroneously reported to have died from some other cause, we can begin to form an idea of the appalling prevalence of this scourge, which is world-wide in its devastations. Of the number of deaths mentioned, it is said that at least one-half could be prevented by an early diagnosis. If this statement be even approximately correct, it seems unfortunate that so much money and thought and energy should have been expended in a fruitless search for the essential cause of cancer, while so little has been done to elaborate methods for its earlier recognition, to study the clinical facts in regard to it, and to treat in a practical manner the great problem which it presents. Recently, however, the plan of attack has been along the lines of which I have spoken, and scientists and laboratory workers are earnestly searching for the much-coveted diagnostic key, practicing physicians everywhere are discussing the subject from a clinical point of view, and organizations and philanthropists are busy themselves with conditions which need amelioration as well as theories which need support.

It is my purpose to speak only of cancer of the cervix uteri, and to present briefly some of the signs and symptoms which may be utilized with advantage in dealing with it in its early and curable stage. First, as to the symptoms. These may be given in a general way as pain, hemorrhage and discharge. It is constantly to be borne in mind, however, that there is no symptom of cervical cancer which is present in all cases, and, in some instances, all the ordinary symptoms may be absent until the inoperable stage has been reached. This fact is one of great practical importance and gives great emphasis to the necessity of a physical examination in all cases in which there is the slightest suspicion of malignancy.

Of the symptoms which I have mentioned, hemorrhage is by far the most important and the most ominous. It may first appear as a prolongation of the regular menstrual period, or as a slight bleeding in the menstrual interval, in the form of a spot of blood upon the clothing or a slight streak in the leucorrheal flow. This apparently insignificant intermenstrual hemorrhage is said to come from the capillaries in the mucosa which overlies a cancerous nodule, or from the diseased tissue itself, and is particularly apt to follow any kind of irritation or pressure upon the affected parts; such, for example, as that caused by long walking, straining at stool and sexual intercourse. In cases where the menopause is supposed to have been passed, the hemorrhage of cancer is frequently regarded with complacency, if not with satisfaction, because it is thought to indicate a re-establishment of the menstrual function. The secret of many delayed cases of cancer lies in this belief, which has hitherto had wide acceptance among women. All the forms of hemorrhage to which I have referred, in a woman between 35 and 60, furnish a sufficient reason for a careful physical examination.

Leucorrhea may be present before there has been any pain or hemorrhage, and some surgeons have placed great reliance upon certain so-called distinctive features of the flow as it is seen in the early stage of cancer. It seems, however, to be an ordinary cervical leucorrhea, the amount of which has been increased by the irritated and overactive cervical glands. I do not think there is anything characteristic about it as an index of the disease in its curable and incipient stage.

Pain, as one of the criteria of early cervical carcinoma, has little or no value. The cervix, as we all know, is comparatively insensitive, and, until the disease has invaded contiguous structures, practically no suffering is, as a rule, complained of. Such invasion having taken place, the location, char-

acter and intensity of pain will be determined by the particular structures directly affected or pressed upon by the cancerous growth. Favorite seats of referred or reflected pain are the sacral region of the back, the ovaries, the rectum and the thighs.

The symptoms which I have enumerated are those which are most common in cancer cases, but, as I have said, none of them is in any way characteristic or pathognomonic of the disease. If so, no examination would be necessary. It is, therefore, worthy of repetition that, in women of the so-called cancer age, no indication, however slight, of the possible existence of cancer, should be lightly regarded. Expectancy and therapeutic nihilism find here no possible justification. Duty demands action, and the proper action should be a thorough physical examination, followed, if necessary, by a prompt resort to the microscope.

The physical signs elicited by such examination are of great value. They will depend, of course, upon the location of the epithelial cells in which the disease originates and the direction in which it grows. Cancer of the vaginal portion—the squamous-cell carcinoma—frequently begins upon the site of an inflammatory erosion which has followed an old cervical tear. The beginning of the transition from the benign to the malignant cannot be demonstrated except with the aid of the microscope. A little later, when disintegration of tissue has begun or the cancer has assumed the so-called vegetating or papillary form, the resulting ulcer or the polypoid mass does become demonstrable by the unaided senses. Before this has occurred, however, it is to be noted that the suspected area bleeds more easily upon being touched than does the simple inflammatory area and may be noticeably elevated above the surrounding tissue. Careful palpation of its margins may also disclose an indurated edge, while the submucous portion of the cervix is peculiarly dense and hard. When a decided ulcer is found, these characteristics are, of course, much more marked. The very presence of such an ulcer, or, indeed, of any ulcer, is strongly indicative of malignancy, since we know that benign ulcer of the cervix is extremely rare. The polypoid masses to which I have referred may be found as wart-like growths or eminences which are peculiar in their friability and the readiness with which they bleed upon even the gentlest manipulation.

The most insidious form of cervical cancer is that in which the disease begins in the cylindrical epithelium of the cervical canal. Fortunately, this is relatively uncommon, for in it extensive destruction of tissue may take place without any evidence upon the exposed surfaces. Of course, where there has been a bilateral tear with eversion of the mucosa, this form is more quickly recognized.

Beginning in the mucous membrane of the cervical glands, cancer very commonly appears in the form of nodules in the substance of the cervix. These require to be differentiated from the so-called Nabothian cysts, which are so frequently seen in connection with lacerations and are referred to as cystic degeneration of the cervix. The exclusion of such cysts is easy, both by their appearance when they project beyond the surface, and by the simple expedient of puncturing them, when the characteristic mucilaginous contents will become evident. An interesting point in connection with these cancerous nodules is that the mucous membrane which overlies them is not alone congested, but upon palpation it seems glued to the structures beneath and does not glide readily over them, as in the normal and in benign conditions. This is an extremely suggestive sign and is, I take it, analogous to the retraction and dimpling of the skin which furnish so valuable a diagnostic guide in cases of cancer of the breast.

In all forms of cervical cancer, there is a general induration of the tissue, the normal resiliency and elasticity of which are practically lost. This gives not only a useful palpatory sign, but it is peculiarly noticeable when an attempt is made at dilatation, which demonstrates its firmness and incompressibility in a striking manner. Some surgeons have tried to make use of this peculiar attribute of cancerous infiltration for purposes of early diagnosis, and especially as a means of differentiating between the results of inflammatory and malignant disease—the inflammatory cervix yielding to the dilator and becoming softened under the influence of continuous pressure. The slow method of dilatation (as by the use of tents) seems better adapted to this purpose than the rapid divulsion with metallic instruments. The use of sulphate of copper was thought by Heitzmann to be a re-

liable and unfailing aid in the recognition of the incipient ulcerative form of cancer of the cervix. He applied a 10 per cent. solution of this drug to the suspected area, producing hemorrhage in beginning cancerous ulceration, and a bluish-white coating without hemorrhage in cases of simple or inflammatory erosion.

The best evidence that there is no absolutely certain method of diagnosing cancer in its earliest stages, except by the use of the microscope, is afforded by the efforts which have been and are now being made to find some change in the human organism which can be said to be peculiar to the disease. These investigations have been conducted chiefly in the fields of chemical and serological research. Perhaps the most promising serum-test is that of Abderhalden, concerning whom and whose work in the sero-diagnosis of other conditions much has been said and written in recent months. His test has for its basis the premise that when foreign proteins gain access to the circulation, the organism reacts by elaborating a ferment which causes their disintegration or digestion. The same reaction is thought to take place when certain peculiar proteins are derived from the body itself—by autogenesis, so to speak. Elements from the placenta, for example, pass into the maternal blood, and the serum has been shown to be able to digest placental tissue. This change, it is believed, occurs only in pregnancy, and therefore the test for pregnancy is based upon this principle. It has been assumed that in cancer analogous reactions occur, and the experimental digestion of cancerous tissue by the serum of suspected patients, who later have shown unmistakable evidences of cancer, has given much encouragement to those who would attack the disease in its real incipiency.

To discuss the early diagnosis of cancer naturally leads one to consider the various measures which have been proposed for the purpose of restricting or preventing it, as far as possible. Much has been said of late regarding these phases of a great and pressing problem, and I trust I may be pardoned for making reference to them before I close. For the general educational campaign now being waged under the auspices of a number of state and national organizations, both lay and professional, I have only words of commendation. The instruction of the public as to the possible significance of the much neglected early signs of cancer is unquestionably a step in the right direction, but unfortunately the very classes of society in which cancer is most frequently to be found can not be reached by newspapers, magazines or public lectures. I believe that the general practitioners of medicine constitute the most important agency in the instruction of the public, and if all of them would take advantage of the many opportunities which come to them to explain the possible meaning of hemorrhage, discharge and pain, at or near the time of the menopause, not only would a decided improvement in the mortality statistics of cancer be effected, but much of the onus and blame which come to them in cases of fatal procrastination would be avoided.

Going further with the duties and responsibilities of physicians, I beg to quote from statements made by Dr. Howard A. Kelly and Dr. William Easterly Ashton, because they so well express the opinions which I have long held, and to which I have frequently given expression. Dr. Kelly, in his *Medical Gynecology,* published in 1908, has this to say: "In from six to eight weeks after every confinement the medical attendant should see his patient, with the object of making a careful inspection and of noting in his case-book the extent of the traumatism caused by the labor and just what lesions remain. Every woman who has borne children should be examined by a competent physician at least once every year until she is fifty-five years old. The effect of an adoption of these rules would be prompt discovery of an enormous number of cancer cases in their very incipiency. That such a course would be distasteful to women at large, I do not doubt, but who would measure such a trifling sacrifice against the great gain of even a small increase in the percentage operability of this distressing and today largely hopeless class of cases?"

Dr. Ashton, writing in August, 1912, expresses still more pertinent and definite views in the following words: "While nothing is known of the cause of cancer, yet it is a clinical fact that the disease occurs almost exclusively in women who have borne several children, and consequently, so far as our present knowledge serves us, it is important that lacerations of the cervix should be viewed in the light of a dan-

gerous predisposing cause. As a prophylactic measure, therefore, all such traumatisms should be repaired. This is especially true of lacerations which are associated with eversion of the mucous membrane of the cervical canal, cystic degeneration, erosion and hyperplasia of the tissues of the cervix. The obstetrician, before discharging a patient after confinement, should examine the cervix, and if a laceration is found to be present, it should be repaired within three or four months. It should also be the duty of the general practitioner to examine the cervix of all women who consult him for pelvic symptoms and urge a repair operation if a laceration is found. And finally, I would urge, as a routine practice, the examination of every woman over forty years of age who has borne children and the immediate repair of all lacerations of the cervix that may be discovered. The prophylactic treatment of cancer of the cervix, in my judgment, is most important, and I am convinced that the frequency of the disease could be materially lessened if the general practitioner would educate his patients to appreciate the necessity for repairing cervical tears."

Significant and suggestive as are such statements when made by men of wide experience and acknowledged ability, skill and judgment, I feel that I am fortunate in being able to give them additional value by referring to the work of another surgeon who has recently spoken, not of what should be done, but of what has been done by him along the lines indicated in the above quotations. Dr. L. M. Bossi, in the Zentralblatt für Gynäkologie, of July 5, 1913, says: "The purpose of so-called prophylaxis seems to have been early diagnosis with the object of timely hysterectomy. This is surgical therapy, not prophylaxis. The aim of gynecologists should be to find the means to prevent the development of uterine cancer. Is this impossible? Twenty-seven years of clinical experience sustains an affirmative reply. Remove the predisposing chronic lesions from the cervix and cure by the curette or otherwise the hyperplastic formations of the corporeal mucous membrane. In my experience with 7,000 cases in which I have performed plastic operations on the portio vaginalis, I could in none of them even after many years establish the development of cancer, where it is concededly most frequent. I am sure that, in most cases, the origin of cancer is to be found in chronic lesions and inflammations (endometritis, endocervicitis, etc.), which have been treated in the usual dilatory way and especially with chemical caustics, whose misuse creates serious disturbances in the tissues. The assertion that cancer has its origin in injuries or lesions, themselves benign, which are not treated in time or in a proper manner, therefore follows. A really humanitarian and clinically scientific work would be a propaganda for the prophylaxis of cancer of the uterus, the basis of which should be timely, systematic and persevering surgical treatment of benign affections of the cervix and uterine cavity."

In the preparation of a suitable address for this occasion, I have encountered many difficulties and frequent interruptions. Such as it is, however, I offer it to you with my best wishes for the success and permanency of the Franklin Square Hospital Medical Association. I now have certain more or less clearly defined opinions with regard to the cancer problem which I beg to submit to you in closing. I should be glad indeed, if, by some happy thought or useful suggestion, I could aid, in an appreciable degree, in the warfare against what has been fitly characterized as a national peril.

In my judgment, the Franklin Square and every other public general hospital in this city and elsewhere should maintain a well-equipped and properly conducted department of surgical pathology, open to all reputable physicians, who should be encouraged to send specimens for examination and especially scrapings and sections from cases in which cancer is suspected. I would carry the laboratory idea further, because, for economic if for no other reasons, the organized governments of the state and city, in their respective health divisions, should also provide facilities, likewise available to all licensed practitioners of medicine, for a prompt and authoritative report upon cases of suspected cancer, as they now do so effectively in cases of tuberculosis, typhoid fever, diphtheria and other less serious ailments. Why, for example, should not the functions and duties of the State bacteriologist or pathologist include reports upon suspected cases of malignancy, especially among the poor?

Moreover, it occurs to me that the medical schools, in arranging their curricula, might with advantage give greater prominence to the most advanced methods for the early recognition of tuberculosis and cancer, and that

State licensing boards, against whose unpractical examinations much deserved criticism has been directed, should also place more emphasis upon these vital subjects and give greater relative credit to those who show a familiarity with them. What a stimulus this would be to the undergraduate who is preparing to "run the gauntlet" of the examining board and, at the same time, endeavor to equip himself for the imminent and important problems with which he is sure to be confronted, even in the beginning of a medical career!

And finally, I desire to state in the most deliberate manner that, in my opinion, humanitarians, philanthropists, social workers and legislative bodies, with money at their command to spend or to appropriate for useful purposes, would do well to divert their attention for a while from public libraries, free drug dispensaries, spasmodic and abortive vice crusades, experimental radium institutes, societies for the promotion of the welfare of lower animals, and other more or less commendable, if not always utilitarian projects, and focus it upon the poverty-burdened women of the country who are sadly in need of public maternities, where the most important function of their lives could be safeguarded and conducted with proper care, supervision and environment, in which or from which the subsequent physical welfare of mothers could receive systematic and capable attention, and under the auspices of which the *real* prophylaxis of cancer could be effectively practiced. The establishment and maintenance of nurseries for the care of the children of the poor during the lying-in period would of course be a logical and natural accessory to such institutions, and would do much to promote and facilitate their general use.

IDIOSYNCRASY TO COW'S MILK IN EARLY INFANCY.—According to Dr. P. Hertz (*Pediatrics*), since the first cases of idiosyncrasy to cow's milk in early infancy were recorded by Finkelstein and Schlossmann ten years ago, about 20 similar cases have been recorded; but with one exception, they have been observed in German hospitals. Evidently the condition is rare, when only typical cases are considered. It is not uncommon for disturbances to follow the transition from human to cow's milk in infancy, but the term idiosyncrasy, as applied to intolerance to cow's milk by infants, should be confined to those cases in which severe symptoms follow the ingestion of even minute quantities.

The subjects of this curious condition are almost invariably weakly children who, immediately or soon after birth, have been artificially fed, and, having done badly or developed gastro-intestinal symptoms, have been fed by a wet-nurse and have thereby regained weight and general vitality. After this diet of human milk has been given for a week to several months, an attempt to wean the child with small quantities of cow's milk is followed by a violent reaction. The first bottle containing some cow's milk is drunk unwillingly by the child, who vomits repeatedly during the meal. In half an hour to an hour it becomes restless, cold, pale and cyanosed. The respiration is raised, and the temperature ranges from 100.4° to 104°; in exceptional cases it is subnormal. The motions, which have been normal, become fluid, slimy and lumpy; and the urine sometimes contains albumin. The child rapidly loses weight, and presents the symptoms of severe alimentary intoxication. In many cases it recovers with extraordinary rapidity, and in a few hours the temperature is normal again. But though a diet of human milk is again resorted to, the first meals are taken with poor appetite, and are followed by vomiting and irregular action of the bowels for the next few days. In other cases the temperature may remain high for several days. The child's appearance is unsatisfactory, the appetite is poor, and it takes 8 to 10 days' exclusive diet on human milk to regain its former state. At first the same reaction follows every succeeding attempt to change the diet from human to cow's milk; but the reaction becomes gradually slighter till, by a cautious dosage, it is ultimately possible to feed the child on cow's milk without ill effects.

VISUAL DISTURBANCES AFTER THE USE OF ATOXYL.—According to Dr. R. Steinerbach, (*Boston Medical & Surgical Journal*) visual disturbances after the use of atoxyl are not common when the drug is carefully used, and occur usually in those cases in which there is an underlying affection of the nervous system, as in severe cachexias and auto-intoxications, tabes and cerebral syphilis, and especially chronic alcoholism. These conditions are distinct contra-indications to the use of atoxyl.

ABSTRACTS

NEW INTERNAL SECRETIONS AND A NEW FUNCTION OF THE BLOOD-VESSELS.—Dr. R. Lepine (*Monthly Cyclopedia*) contributes the following:

When a gland is not provided with an excretory duct, there is ground for supposing that it throws into the blood an internal secreton, but this cannot be, *ipse facto,* affirmed with certainty. Blum a few years ago still held that the thyroid gland does not produce such a secretion and that its sole function is to destroy toxic substances. Metzner, as regards a secretion of the spleen, remains doubtful. To the author, however, it hardly seems that one can doubt its existence, for Schiff, Herzen, and others have shown that this gland exerts an influence upon the production of trypsin in the pancreas. The author has personally performed experiments which have seemed to him to justify this view.

Like several of his predecessors, Brown-Sequard thought that internal secretory products must be sought for in the venous blood, and that "if the fluid derived from the tissues yields insufficient results, it is the venous blood from these parts that must be injected." This assertion appears to the author quite open to question, for there are definite facts proving conclusively that the venous blood of an organ does not always clearly contain its internal secretion—thus, various investigators have failed to find that blood from the pancreatic vein excites glycolysis. True, Hedon, causing the blood from the caudal pancreatic vein of a normal dog to pass into the venous system of a depancreatized dog, found the glycosuria in the latter animal to be considerably reduced thereby; but the glycosuria did not entirely cease, nor was the hyperglycemia diminished to a noteworthy extent. This was due to the fact that the lymphatics could not be taken into account in this experiment. The lymph of the thoracic duct (especially after stimulation of the nerves to the pancreas with the faradic current) has a very pronounced influence in activating glycolysis (Lepine and Boulud), and proof that a flow of lymph is essential for general glycosuria has been supplied by Biedl who, upon interrupting this flow by ligation of the thoracic duct or the production of a fistula leading the lymph to the exterior, observed glycosuria as a result in two-thirds of the dogs thus operated.

That a portion of the internal secretion of an organ should be delivered through the lymphatics, which constitute the natural efferent pathway for the interstitial fluids bathing the tissues, cannot be deemed surprising. It is even a possibility that, at least in some organs, it is only the excess of internal secretion which passes into the vessels, by virtue of complex physical laws as yet far from being well understood. If, for example, the interstitial fluid of an organ contains more than 4: 1000 of sugar, and if the endothelial cells of the lymph-spaces and capillaries do not stand in the way, a portion of this sugar will necessarily pass by osmosis into the blood, which contains only 1 :1000 of sugar; but, unless the endothelia are endowed with special properties, not all the sugar will pass into the blood. Just how much actually will enter the blood cannot be stated. (Ishimori, after puncture of the floor of the fourth ventricle, found the lymph-spaces of the liver greatly dilated, and even containing glycogen granules.)

To obtain complete information concerning the internal secretion of an organ it would be necessary to collect not only the venous blood but also the lymph, and to be able, by chemical or biologic methods, to estimate the amount of internal secretory principles present. This cannot now be done, but in spite of the great difficulty attending collection of the lymph from the narrow lymphatic channels, it is not impossible that, through progressive improvements in technique, the fluid will in future become available, either directly or by an indirect method, *e.g.,* by collecting the lymph from the thoracic duct after having interrupted the flow of lymph into it from certain definite regions.

On the other hand, that a portion of the internal secretions is discharged directly into the blood has been established. The passage of certain of these secretions in the blood is, in fact, greatly facilitated by a histologic feature pointed out by Minot, viz., that in some organs the blood capillaries are in immediate contact with the parenchymatous cells. Indeed, in certain localities these capillaries, according to Minot, lose their own endothelium.

The author recently discovered, with Boulud, that a segment of a vessel (artery or vein), if obtained immediately after the death

of the animal and immersed in the blood issuing from a vessel preserved as far as possible from glycolysis, has the power to split off the combined sugar in the blood. If placed in a solution of phloridzin it will likewise cause cleavage of the latter, in part at least; a solution of monobutyrin is also partially broken up by it. Thus it is clear that vascular wall tissue can set free ferments. The latter can be extracted with water, for water used to wash a vessel exhibits the same property as the vessel wall itself. Passage of these ferments from the vessel walls into the blood takes place under normal conditions, for normal blood contains them—although, to all appearances, in rather small amount. Under certain conditions, the amount in the blood is manifestly increased. In respect of the ferment that splits off combined sugar in the blood, this was proved in the following experiment of the author: A cannula was placed in each femoral vein, the sciatic and crural nerves cut on one side only, and a sharp blow with a mallet delivered on the animal's head in order to produce pronounced concussion of the brain, with temporary arrest of respiration, etc. One or two minutes after the mallet blow, blood was collected simultaneously from the two veins and kept under conditions inimical to glycolysis. Then fifteen or thirty minutes later, the amount of sugar in the two samples of blood was ascertained. The blood from the side with uncut nerves was found to contain more sugar than that from the side upon which the nerves had been cut. This fact, observed repeatedly by the author, is apparently to be explained thus: As a result of the cerebral concussion there was produced in the tissues, on the side of the uncut nerves, some substance of the nature of a diastase which caused *in vitro* liberation of glucose at the expense of the combined sugar in the blood. This substance could, of course, not be produced on the side on which the nerves had been cut, the influence of the cerebral concussion not being exerted because of their section.

Other observations have shown that a nervous influence increases (through the ferment already referred to) the combined sugar in the blood. Seegen, for example, after faradic stimulation of the crural nerve, found the sugar in the femoral vein increased in amount; it was not increased upon direct stimulation of the muscle. Asher and Karauloff have similarly noted an increase in the amount of sugar in the submaxillary vein upon faradic stimulation of the chorda tympani. Thus, a nervous influence is capable of increasing the blood's asset in free sugar in the area supplied by a stimulated nerve. As the saliva contains no sugar, unless it be in exceptional instances, it is probable that the sugar produced in the capillaries of the submaxillary gland is consumed in setting free energy. Seegen's observation tends to show that combined sugar is liberated in the capillaries of muscle tissue during muscular contraction.

Not so many years ago our knowledge of the physiology of the blood-vessels was confined to the vasomotor action which regulates the capillary circulation and, in part at least, the blood pressure. Yet over thirty years ago Ludwig and Brasol had already shown that a few moments after an intravenous injection of glucose, before the kidneys could eliminate an appreciable quantity of it, the glucose was no longer in excess in the blood, having passed into the lymph and tissues. This almost instantaneous depuration of the blood, ofttimes noted, has since been studied after intravenous injection of various salts, sodium chloride in particular. Thus, the blood-vessels have in themselves the power to eliminate from the blood substances present in it in excess. But they are also capable of causing to enter into the blood substances present in excess in the tissues and useful internal secretions, notably ferments: An hypoglycemia, *i.e.*, the presence in the blood of an amount of sugar less than normal, causes transudation through the endothelium of a ferment which, by its activity, increases the quantity of sugar in the blood. Probably Hanriot's lipase or fat ferment likewise passes into the blood when there is a need for the liberation of energy. Achard has found the lipase in the blood serum increased in diabetics, perhaps in order to make up for the insufficient glycolysis. Thus, the small vessels can, on occasion, supply an increased amount of energy not only through vasodilatation but by causing ferments to pass into the blood.

Is this entrance of ferments into the blood the result of an actual secretory process? Such a possibility cannot be countenanced, for the flat endothelium of the vessels does not present the features of a true secreting cell; it allows to pass in, however, to a greater or less extent, according to conditions as yet unknown, the ferments already existing in the adjacent tissues. The results of experiments performed by the author with Boulud proved this; the aorta was found to contain ferments even after the intima had been removed from it by scraping. It is known, moreover, that

the ferment which breaks down phlorizin is present in the renal parenchyma, and Hanriot's labors have shown that the lipase of the blood (which is not identical with that of the pancreas), is met with in the liver. These ferments are more widely distributed than has hitherto been thought; the author has found them in the omentum, the pericardium, the spleen, the nerve trunks, etc. It is even possible that they are produced in all tissues.

PEPTOLYTIC FERMENTS IN TISSUE CELLS AND IN BLOOD REACTIONS AFTER DEATH.—Dr. M. Mandelbaum (*Muench. Med. Wochenschrift*) speaks of the interest that has been given lately to the research on blood ferments and their action. It was through the ingenuity of Abderhalden that the action of the cell ferments in the blood on pepton and peptids was brought out. They were called by him peptolytic ferments. Their existence was first demonstrated in the cells of organs from animals, but as a rule they were not found in blood-serum. Guinea-pig serum showed an exception to this in that it rather strongly split the polypeptids. On the other hand, Abderhalden showed that the serum from an animal that in itself was unable to split polypeptids obtained this power when parental albumin or peptids was added. These peptone or peptid splitting ferments are not specific, *e. g.*, they have the ability to break up any peptone added. The correctness of these findings has been corroborated by Gruber and later substantiated by Lenk and Pollak, who applied this method in diagnosis. In testing transudates and exudates they found that the peptolytic index was higher in tubercular than in carcinomatous exudates. They also found that the fermentation power of the cerebrospinal fluid in tubercular meningitis measured on cleaving of glyzyltryptophans was very strong. In the blood-serum of sick people they found the peptolytic ferment in most cases only in slight concentration. In one case only it was found raiced, but not constant. In testing, the serum was used in a series of dilution of which 0.5 c.c. was mixed with 0.5 c.c. glyzyltryptophan and covered with toluol and kept at 37° C. for four hours, when it was tested for free tryptophan.

Mandelbaum follows the same technic but lets the test act at 56° C. for one hour. He found in general that in a dilution of 1 2 a negative reaction was obtained. Occasionally a very slight cleavage would take place as shown by adding acetic acid and a sol. of calcium chloride which gives a pink color. If the exudate came from a tubercular process a dilution of 1.20 or more would give a positive reaction. Exceptions to this have been found occasionally so that all cases of tuberculosis do not give a positive reaction. Therefore a negative reaction does not speak against tuberculosis.

The same results have been found in testing cerebrospinal fluid and a peptolytic index of 1.20 speaks for meningeal tuberculosis but a lower index not necessarily against it. In all other diseases the diluted cerebrospinal fluid has no action on glyzyltryptophan.

Thus the peptolytic power of cerebrospinal fluid transudates or exudates with exception of that from tuberculosis after an hour's action on peptids at a temperature of 56° C. is as a rule none. If the peptolytic index rise above 1.20 it speaks for tuberculosis.

In connection with the above work Dr. Mandelbaum has also determined that the spinal fluid from meningeal tuberculosis after death shows a still stronger action on glyzyltryptophan. An index of 100 or more was the rule. The exudates showed a similar increase in the peptolytic index, but in testing the blood serum after death it was found that the peptolytic power was only slightly increased. An index of about 2 was the rule. In long continued febrile diseases in severe cases of nephritis and phthisis, etc., a slight rise in the index was found but never to exceed 1.8.

By obtaining blood immediately after death through puncture of the heart or median basillic vein, and testing the separated serum for peptolytic ferments, a marked increase was found. The limit of the peptolytic power of serum was found by diluting with normal salt solution and lies between 1.30 and 1.60.

When death was caused by tuberculosis the peptolytic index was found much higher and was found to lie between 1.250 and 1.500. This is, however, not charactertistic of tuberculosis alone, it was also found in a seven months' child who died from pernicious anemia, it was also found in anemia due to illness of long duration.

Thus the concentration of the peptolytic ferment in serum of healthy people and in severe illness is very slight and rise very little during life. After death the peptid upbuilding powers rises markedly (most in tuberculosis). Man can therefore use this method in determining the strength of the ferment in blood serum or glyzyltryptophan by an hour's incubation at 50° C. and by using different dilutions. It may also be used in de-

termining approaching death and may thus be termed "death reaction."

In explanation of the above it may be said that all cells in the body contain ferments which are able to split peptone into peptids, each cell, however, does not contain equally powerful ferment, this can easily be demonstrated: A piece of tissue, of any kind, the size of a linseed is placed in ½ c.c. physiologic salt solution and ½ c.c. glyzyltryptophan is added, placed in the incubator or oven at 56° C. for half an hour. It is then tested for free typtophan. A rose-red color is recorded as X and a blue-black color as XXXX. In this way it was found that liver, pancreas, thymus, lung, kidney and then the endothelium of the serous membrane gave the strongest reactions and between these stands the other organs and tissues. It is interesting to note that the endocardium has a strong ferment, while the wall of the aorta next to it has a very weak ferment. During life these ferments bind themselves very strongly to the cells, and even in the strongest forms of consumption a very small amount of the ferment is given off and circulates in the surrounding blood and lymph vessels. It is no doubt that these ferments come from the cell which break down in case of disease and become permeable to the ferments. When death sets in or even during death-agony this change sets in suddenly as a stroke, it appears as if the cells had suddenly burst open and pouring out the ferments in the surrounding fluid.

THE PROPHYLAXIS OF MEASLES.—Among the various diseases which are so common and in general so mild as to receive little consideration by the general public, says the Medical *Review of Reviews*, none is of more importance than measles. It is difficult to believe that small pox in the seventeenth century was a disease of children and infants and as widespread and generalized as is measles today. The epoch making discovery of Jenner revolutionized the status of smallpox; and vaccination of today has made this disease practically so rare as to be classed among the diseases of previous ages. There is no doubt that the same status will hold true for measles in the future when some great mind shall have provided the proper prophylactic agent.

Pending this time, it is incumbent upon physician and layman alike to lessen the frequency of measles. The prophylaxis of measles is of tremendous social significance in the protection of infancy and childhood. The prophylaxis of measles has received inadequate attention and it is therefore well to review our present knowledge in this particular matter, as has been done by John Ruhräh (*N. Y. Med. Journ.*, Apr. 25, 1914).

Of all the common diseases of childhood, measles is perhaps the most neglected when it comes to the standpoint of treatment, and this is one reason that the mortality in this disease is as high as almost any of the diseases of early life.

Age is a very important factor. There are but few deaths in children under six months of age. In cold, wintry weather more children succumb than in the summer, owing to the fact that in winter the fresh air is carefully excluded and overcrowding is liable to take place. Children living in the city are more liable to die than those in the country, partly on account of the lowered resistance, and partly on account of the overcrowding and lack of fresh air.

One of the greatest factors in lessening the mortality is to prevent children under five years of age from contracting it. In place of trying to shield young children, one often sees them purposely exposed to the disease in order that they may get it and get it over with.

If a child is isolated promptly in what is real isolation, measles is not particularly liable to jump its boundary. The fault usually is that the isolation is not carried out in a satisfactory manner. One reason for failure up to the present time is the fact that measles cannot be properly isolated in apartments, especially where there is any overcrowding; but while this is true as regards any individual family, much can be done by keeping out children of other families, and adults as well, on the principle that the fewer persons that come in contact with a contagious disease, the fewer are liable to contract it.

The second point in the prophylaxis of measles is the closing of schools in the face of threatened epidemics. This protects the young child indirectly in that it lessens the danger of the older children in the family becoming infected and so bringing the disease back to the home to start a new focus of infection.

The question naturally arises, what is necessary to prevent the spread of measles? The answer is, to prevent susceptible individuals—practically everybody is susceptible who has not had the disease—from coming in contact with individuals who have the disease or with objects that have recently come in contact with such an individual. Measles is transmissible from the beginning of the catarrhal

symptoms, and there is great difficulty in the practical prevention, as the disease is usually not recognized until the eruption appears.

To be effective the isolation must be such that susceptible children do not come into immediate contact with, or in the neighborhood of the sick child. Such isolation should be started early and in order to do this it is necessary to make at least a tentative diagnosis. The problem of diagnosis will depend on whether the child is under the supervision of a physician or not. In schools and in institutions for children in which there is anything like adequate medical inspection, the early cases of measles may usually be determined by a number of diagnostic methods, if not with certainty, at least with sufficient accuracy to isolate the child pending further developments.

If there is loss of weight or any other reason to suspect that the child is getting measles, an examination of the blood may be made. When the stage of invasion is reached, the disease may be suspected if there is fever, especially if accompanied by catarrhal symptoms affecting all or almost all of the mucous membranes. In addition, there is almost invariably marked drowsiness.

Two other signs are of value; one, the cyanosis of the tongue which is seen a day or two before the eruption appears, and the other, of the greatest possible value, is Koplik's spots. These spots sometimes may be seen as early as four days before the appearance of the eruption, and usually two days or one day before it appears. If the child is not under medical supervision, but is attending school, the problem of isolation will rest with the teacher or with the family. The school teacher should be instructed as to the beginning signs of the various contagious diseases, and all children with catarrhal symptoms should have the temperature taken, and if there is fever, should promptly be sent home.

With the diseases of childhood one lesson should be taught, if nothing else, and that is that the fewer people who come in contact with a sick child, the fewer will contract the disease, and this applies not only to measles, but to almost all of the infectious diseases.

The prophylaxis of measles will be seen to depend on the isolation of cases, particularly in preventing well children from associating with those who are ill until a diagnosis has been made, upon the closing of schools in the face of severe epidemics, and in the hospital treatment of the contagious diseases.

TREATMENT OF FIBROIDS BY DEEP RŒNTGENOTHERAPY.—Dr. J. J. Levey (*New York State Journal of Medicine*) concludes that Rœntgenotherapy has the following advantages over surgery:

1. It is a harmless method; whereas the mortality after fibroid operations is at least five per cent. in the hands of the most skillful surgeons.

2. There are many cases associated with severe kidney or heart lesions in which the surgeon dare not operate. The most radical surgeon will admit the great value of the Rœntgen rays in this class of cases.

3. There are many women who have a horror and a great fear of an operation and these would welcome a method which would cure without the use of the knife.

The length of time to bring about a cure is from one to three months, depending on the age of the patient. A woman of fifty will be cured in a much shorter period than a woman of thirty-five. In women over fifty a cure can be brought about in a comparatively short time, but in women under forty, it demands much larger doses and a longer period, for the younger the individual, the more resistant are their ovaries to the action of the X-rays.

The radiologist should work in conjunction with the gynecologist. If we find after two months of treatment we have failed to benefit or cure our patient, we can positively state that this case is not a favorable one for Rœntgenotherapy. In order to get positive results, we must employ the proper technique and this must be carried out in great detail. There have been great advances made in Radiotherapy in the last two years. We have given altogether too small doses in the past. We were working with a mysterious force which could not be measured. Today we can measure the rays qualitively and quantitatively. We can give enormous doses without any danger to the patient. Dermatitis or burns are things of the past.

Deep or intensive Rœntgenotherapy means:

1. The use of a very hard tube. The rays from a coil are better suited for our purpose than those of a transformer. The hard rays are very penetrating and we employ them exclusively in gynecological conditions.

2. The tube should be near the part to be treated. The anticathode should not be further distant than twenty centimeters.

3. The use of a thick filter. Three millimeters of aluminum is the best filter. Filters make X-ray therapy perfectly safe, as the soft

rays, which only irritate the skin, are filtered off, while the deep, penetrating hard rays are the only rays that can pass through the filter.

4. Cross-fire Technique. Instead of having one point of entry for the rays we can have as many as twenty or more, but for the average case we utilize only six points of entry. The lower part of the abdomen is marked off into six areas and each area is given a full Sabouraud dose. This constitutes one series. This procedure is repeated every two weeks until five series have been given, or in all thirty full Sabouraud doses. The treatment is started just after the menstrual period. After the third series, improvement is very marked, and after the fifth series, a cure generally results. It is essential that the Sabouraud pastille be placed two centimeters from the tube and under a three-millimeter aluminum filter, the same thickness that is used for covering the abdomen. Kienbock's quantimeter is also a very scientific method to measure the amount of radiance administered. A standardized photographic paper is used and after development it is matched with a standard scale. We should always use the Sabouraud pastille and Kienbock's quantimeter in our therapeutic work, as it is extremely essential to be accurate in our dosage. This new technique of intense, filtered, deep, penetrating rays has brought about splendid results, not only in gynecological cases, but also in many other conditions; and even more may be expected in the future with further improvement in technique.

SUMMARY.

1. Every case should be examined by a gynecologist to be sure we are dealing with a myomatous uterus.

2. Pendunculated submucous fibroids and those undergoing malignant degeneration are surgical cases and, therefore, they should not be treated with X-rays.

3. X-ray therapy is perfectly safe and is without danger, provided we select our cases and the proper technique is employed.

4. Seventy-five per cent. of fibroids can be treated successfully by deep Roentgenotherapy.

CICATRICIAL ECTROPION OF THE UPPER AND LOWER LIDS.—Dr. J. P. Worrell (*Journal of Ophthalmology*) reports the following:

The patient, a man of fifty-four years of age, in an attempt to rescue his wife from burning gas, was severely burned on the hands and face, losing most of his fingers and suffering such injury to the face that the contraction incident to the cicatrization resulted in complete ectropion of all the eyelids.

The patient came under treatment seven months after the accident and presented the following conditions: Below the level of the outer canthus the parts were lined and seamed and so adherent to the underlying tissues that little mobility was preserved. This condition was much aggravated by an injudicious attempt to correct the deformity made soon after the wounds had healed, as was evidenced by the heavy cicatricial lines. The forehead and upper part of temporal region was smooth, the burn having destroyed the superficial layers of the skin. The right eyebrow was wanting, and the outer third of the left. The upper lids were everted, the tarsus curved on itself and thickened, the eyelid rolling out when the patient looked downward. Cul de sac preserved. The lower lids were stretched downward, obliterating the cul de sac. The conjunctival surface was red, somewhat rough and lying in the plane of the skin below. The tarsus was adherent to the underlying tissues. The lid margin was indicated simply by the line of transition from the mucous membrane to the skin and the presence of a few cilia. The conditions in the right were aggravated by the displacement downward and outward of the outer canthus including the external palpebral ligament.

Correction of the deformity was made by a series of operations, running over a period of several months. Each operation was limited to one lid inasmuch as the operation was necessarily a tedious one, and it was impracticable to prolong the anesthesia. The method employed was the use of sliding flaps, supplemented by Thiersch and Wolfe grafts. In restoring the lids proper, the principle of removing the new cicatricial area as far from the lid margins as possible, as emphasized by Hotz, was followed, such modification of his method being made as the exigencies of the case demanded.

The final result was most gratifying, restoring the lids to their normal position with preservation of their function. From a cosmetic standpoint it was fairly satisfactory.

After the restoration of the lids to their place the condition of the cornea greatly improved so that the iris could be seen throughout its entire circle. The anterior chamber deep, showing that what was thought to be an adherent glaucoma was but hyperthrophy of the epithelium in the attempt of nature to

preserve the eye against the evil effects of exposure. Behind the clearest portion of the cornea iridectomies were subsequently made, giving vision by which ordinary newspaper type could be read.

The diversity of condition afforded an opportunity for the trial of various methods of covering the raw area so that the comparative merits of flaps and the various forms of grafts could be advantageously studied. Thiersch and Wolfe grafts played a larger part in the correction of the trouble than did sliding flaps. Of these the Thiersch graft gave good results, "taking" easily and was followed by little or no contraction of the underlying tissues. The chief trouble with Wolfe grafts is their marked disposition to contract. However, where it is necessary to "fill in," they furnish a means of building up lacking parts that make them indispensable. The effect of their contraction can be avoided in a large degree by making them of ample size, and in exercising great care in their preparation, avoiding traction, and reducing their manipulation to the minimum.

The dressing consisted of an extremely thin layer of absorbent cotton wet in normal saline solution, over which was placed a dry pad of cotton covered with some impervious material, the whole being swathed in gauze and bandages to secure quietude of the parts and maintain equable temperature.

INTESTINAL OBSTRUCTION.—Some interesting studies in intestinal obstruction with the report of a trial of feeding heterologous jejunal and ileas cells to a human being are published by J. W. Draper, New York (*Journal A. M. A.*). He remarks that it is hard to understand why obstruction in the duodenal region should be many times as dangerous as obstruction in the colon, and remarks on the antemortem symptoms of this condition and those seen after parathyroidectomy. No one, he says, could long remain in doubt as to the function of the liver being greatly disturbed in each. He gives tables based on the study of the urine of duodenally obstructed dogs, both before and after a large dose of camphor had been given hypodermatically. The recovery of the glycuronic camphor was made by Tollens' method. In one of the dogs the unusually long duration of life after the operation may indicate high liver resistance or inaccuracy in Tollens' method. Further studies as regards this point are being made. Some experiments were also made to test the hypothesis that water privation was the chief lethal factor after intestinal obstruction. The water percentage in the tissues of dogs was tested under various conditions and the results seem to offer proof that in intestinal obstruction toxemia, the solvent power of water on the toxins and its help in eliminating them from the body may prolong life and even save it under certain conditions. He has carefully examined the liver, heart and kidneys of a large number of obstructed animals and finds that, barring capillary dilatation, they appear normal. It appears, therefore, probable that the toxins of intestinal obstruction are eliminated both from the stomach and the colon. The capillary evidence of stomach elimination suggests the possible explanation of the interesting results of feeding duodenally obstructed animals the epithelial cells from the ileum and jejunum of other animals. Dogs thus fed lived nearly twice as long as the controls. Draper could not previously understand this, but now it seems probable that since the toxins are undoubtedly thrown out into the stomach they are directly rendered harmless by the heterologous cells from a healthy animal and thus prevented from re-entering the body. In order to show that fed jejunal and ileac epithelium exercises a special detoxicating power he also fed a control series of dogs on the emulsified cells of liver, spleen, pancreas and muscle tissues. These animals lived but a few hours longer than those that were not fed, but detoxicating action was very slight compared with that of the intestinal epithelium. He has used jejunal and ileac epithelium clinically in two cases: First, in a valuable dog; and, second, in the case of a man who had had definite symptoms of obstruction for ten days. The patient was in a desperate condition and it was decided to feed him the emulsion from a dog. Hourly doses were given until the entire duodenal epithelium from two dogs had been given. The patient said it was not "half bad." The pulse improved and the patient lived. The toxemia, Draper concludes, in duodenal obstruction undoubtedly arises from an interference with cellular reactions of the intestinal epithelium and the evidence is strongly opposed to the bacterial theory of the origin of these toxins. Draper recommends that it be administered in colonic irrigations as well as by the stomach.

TREATMENT OF PRIAPISM.—Dr. Frank Hinman (*Annals of Surgery*), contributes the following:

There has been no definite method of procedure in the treatment of priapism. Internal medication has no apparent effect. In many cases leeches were applied to the penis and perineum, with no result. Almost all the sedatives and hypnotics known to medicine have been tried and found futile, and even deep narcosis gives no relief. The condition has been treated by operation in 34 cases. In one case the dorsal arteries of the penis were ligated with a cure. In the other cases, incision of one or both corpora cavernosa was practiced and with immediate benefit in all but two cases. In one (Dawson) the incision was apparently too superficial to relieve the obstruction, and the case gradually and spontaneously subsided after 11 days. The other case (Sothron) was of nervous origin and persisted in spite of all medication, and even after incision of the corpora.

The subdivision of the cases into four groups suggests the need of a different procedure in the treatment of each group.

Treatment of Transcient Erections.—This will depend largely upon the etiological factor. In case the recurrent nocturnal erections are the result of an ascending peripheral stimulation from a urethritis, stricture, herpes genitalis, etc., satisfactory treatment of the local disease gives permanent relief. In case tabes is present, recurrent erections may not respond to any form of internal treatment, even antisyphilitic, and certain psychic forms of the condition are equally stubborn. Lewis cured one case of over two years' duration by ligation of both dorsal arteries of the penis. In case of repeated recurrences, in spite of sedatives and thorough local and general treatment, some operative measure along the same lines as for nervous priapism should be undertaken.

Treatment of Priapism of Nervous Pathogenesis.—These cases should have thorough general treatment before subjecting them to operation. Eighty per cent. have a duration of less than ten days, and furthermore the general condition of these cases, particularly those of brain or spinal cord injury, is so serious that the priapism is of minor and secondary importance. Those few cases, however, in which the priapism is the serious feature, and which persist for more than a week, should be relieved by operative means.

Several operations suggest themselves:

1. It would be possible to expose the pudic nerves in the perineum and inject their sheaths with some drug, or to divide them with a knife. The superior terminal division of the pudic nerve with the dorsal arteries penetrates the ischiocavernosus muscle on each side, and supplies this muscle as well as the vessels and intrinsic muscles of the corpora cavernosa and glans. Blocking of impulses carried by it would relieve the spasm of the erector muscles and the erection of the corpora.

2. The two dorsal arteries of the penis can be exposed close to the pubes and ligated, as was done by Lewis. This would prevent an increased blood flow to the corpora and relieve their erection.

3. The ischiocavernosi muscles themselves may be divided in the perineum, and the nerve and artery with them. To what extent the power to have future erections would be destroyed by any of these three procedures is problematical. Lewis does not mention this point in his case.

Treatment of Priapism of Mechanical Pathogenesis.—There seems to be one simple and effective form of operation for this form of priapism, no matter what its particular etiology may be. This is by incision and drainage of either one or both corpora cavernosa. A single incision, inasmuch as the blood-vessels of the corpora anastomose freely, is about as effective as double incision. In the 33 cases in which this operation has been done, there was immediate cure in all but two cases (in one the incision was apparently not thorough enough, and the other in which the operation failed was one of nervous pathogenesis). Worms and Hamont have advised this operation for all forms of priapism, but it would seem to be applicable to the mechanical form only. The operation does not destroy the power of future erections. Priapism even may follow, as occurred in one case several months after the operation. These very favorable results recommend an early and thorough incision of one or both corpora cavernosa in all cases ot mechanical priapism.

Technic of the Operation.—Unfortunately few of the operators have indicated (no one clearly) the procedure followed by them in opening the corpora. The incision in a majority of the cases has been made a little back of the midpart of the corpus on the dorsolateral surface. The mid-dorsum and ventrum are to be avoided because of the dorsal vessels and nerves above and the urethra below. It seems important that this incision should extend well into the spongy tissue of

the body and be of sufficient length to allow of the contents to be thoroughly evacuated. In many of the cases both corpora were opened; in some others only one incision was made on one side and the opposite corpus emptied through this (the vessels of the two anastomose). The fibrous sheath of the corpus should be completely slit and the incision extend deeply into the spongy tissue or the veins and spaces will be with difficulty and only partially emptied.

The contents are described as consisting of "black grumous blood," "thick clot," "thick coagulum," "coagulated blood," etc. No definite thrombus is mentioned nor described for any of the operative cases. Kast found at autopsy, in his case, "large leukæmic thrombi" in the corpora cavernosa. The corpora are only emptied after considerable squeezing and manipulation, and it has been necessary in some cases to make secondary incisions into the spongy tissue through the primary skin opening in order to completely empty the organ of its contents. In all cases the entire corpus seemed involved in the process. In no case was there excessive bleeding afterward. Usually a small wick or rubber drain was inserted and the skin and fascial sheath closed with interrupted or continuous suture.

Perfect asepsis during and after the operation would seem to be of considerable importance, inasmuch as several of the cases subsequently became infected and suppurated for some time and a number of urinary fistulæ are reported with these cases. A number of the cases (following cavernitis) were already infected at the time of the operation. The ultimate results as to the character of subsequent erections, the formation of scar tissue at the site of the incision and as to whether this scar was tender and painful on erection or not, etc., is stated in none of the accounts.

Extraction of Metallic Foreign Body From Vitreous by Giant Magnet Through Scleral Incision.—Dr. Carroll B. Welton (*Journal of Ophthalmology*) writes of the things that influenced the prognosis of the eye from penetrating metallic bodies, and asked th equestion, What should be the procedure in eyes that contain a chip of metal in the interior of the eye?

The proper course was to use the magnet in all cases as soon as possible after the injury. The more attraction power the magnet had, the better, for with a rheostat the amount to pull could be accurately controlled. Although it was sometimes very difficult and, according to some authorities impossible, to extract a fragment of metal weighing 1-32 of a grain or less, nevertheless attempts at removal should be made.

If the metallic body had entered the eye through the cornea, no matter where it stopped, whether in the uvea, lens or vitreous, an attempt should be made to draw it forward into the anterior chamber and then remove through the original opening or else make a corneal incision and then withdraw it. If the body should rest posterior to the lens and could not be drawn forward into the anterior chamber, then a scleral incision at a site nearest the metal could be made and an attempt at extraction with the magnet tried. If the particle had penetrated the eye through the sclera and lay posterior to the lens, then its removal should be made through the original wound of entrance, and no effort to draw it forward around the lens into the anterior chamber should be attempted. The opening in the sclera through which the metal passed into the eye might possibly have to be enlarged to permit of its withdrawal. If all attempts at extraction failed, then the eye should be removed, as an eye which contained a foreign body was ultimately lost.

Finally, each case of metallic bodies within the eye must be studied individually as no single method of procedure would suffice to apply in all cases.

Dr. Welton related a case, the interesting features of which were: 1. That the patient was not absolutely sure that anything had even struck the eye. This showed that no reliance could be placed on the statement of patients as to whether or not a foreign body had penetrated the eye. 2. That the exact localization by means of an X-ray picture was absolutely needed in this case, and this should always be determined in every case of a metallic foreign body in the eye before any attempts at removal had been made. 3. That in all cases where it was suspected that a metallic foreign body was in the eye, the magnetic properties of such tools should be determined before any attempts were made at removal. 4. A remarkable thing in the case was that, though the metal passed through the lens, except for a slight line of opacity along the path of the foreign body, it remained perfectly transparent. 5. The case showed further that the removal of foreign metallic bodies was in some cases impossible except through a scleral incision, and that good results were obtained by this method even though it was contrary to the teachings of Haab.

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NO NEED TO FEAR MEAT

According to the specialists of the Department of Agriculture people even in states quarantined for the foot-and-mouth disease need have no fear of eating meat, provided they cook it thoroughly. The foot-and-mouth disease is not easily communicated to human beings through food, although milk from a diseased cow might transmit the disease to a human being. In the case of milk, however, pasteurization will render it entirely safe. Human beings who do get the disease commonly get it from direct contact with a sick animal. It is wisest, therefore, for people to keep away from all animals having the disease, unless they are properly provided with rubber gloves, coats and boots, and these are thoroughly disinfected after each visit to the animals.

In the case of meat, as in the case of milk, it must be remembered that all herds which actually show the disease are quarantined, and neither milk nor meat from the sick animals can be sold. Sixty per cent of the meat used in this country is produced in the nearly 900 Federally inspected slaughtering and packing establishments located in 240 cities. In these establishments no animal is slaughtered until it has passed an ante-mortem inspection and also a most rigid post-mortem inspection by a veterinarian at time of slaughter. After slaughter its meat cannot leave the establishment until it has been carefully examined and stamped, "U. S. Inspected and Passed." In all these establishments no animal showing any symptoms whatever of foot-and-mouth disease is allowed to go to slaughter, and no meat which, on post-mortem inspection, shows any suspicious symptoms of this complaint can be shipped out of the establishment. All meat suspected of coming from an animal suffering with this complaint is sent, under Government seal, to the tanks to be rendered into fertilizer. The Federal inspection stamp on meat, therefore, means that it is entirely safe.

The Federal Government, however, has no jurisdiction over local slaughter houses which do not ship meat outside of the State in which it is slaughtered. If, however, meat from such an animal did escape from one of these local slaughter houses, which are purely under State or municipal control, all danger of its communicating the disease to human beings would be removed when it is thoroughly cooked and sterilized. Those who are located near an infected region and wish to be absolutely certain of the safety of their meat should cook it thoroughly.

The disease when contracted by adults is not at all a serious illness. It commonly takes the form of slight fever sores in the mouth and a slight eruption on the fingers. In the case of small or sickly children, it may take a more serious form, especially if complicated by other illnesses.

LIFE.

This is a profound theme. My concept is that the Creator endowed every atom of elemental matter with the intelligence and power potentially adequate to construct Man, and stay with him through all metamorphoses and vicissitudes to the end of his mortal career.

Man's genesis is a conjugated cell in his

mother's womb, where it finds conditions exactly suited to its development. These cells do not accumulate in a promiscuous mass, but automatically adjust themselves in a most orderly manner into a series of embryonic tissues, out of which successively arise all the organs pertaining to intra-uterine life. The conjugated cell begins its evolution at its own completed formation and proceeds with orderly precision through embryonic progress; through foetal development; through infantile growth; through the vigor of maturity; through the fading phases of senility; and this vital formative activity of both evolution and involution, there is no hint, suggestion, nor assistance in the individual subject, nor other mortal; every step was formulated and executed by the intelligent potential energy resident in the atoms of matter constituting the conjugated cell. The cell has its genesis in protoplasm, which is a chemic compound of carbon, oxygen, hydrogen and nitrogen, which are abundant elements of the earth; and they are held to be the basis of life. The obedience or affinity of atoms is an organic law impressed by the Creator.

With every step of chemic combination of molecules there is the foundation for progressive steps until there comes exhaustion of the potentiality of the original endowment of energy.

Man is composed of some of the elements constituting the earth; from which his form and features have been molded, his psychologic attributes, and the *breath of life* was breathed into him by the Supernal Power.

The Creator in the beginning endowed the atoms of matter with energy that maintains them in perpetual activity. There is no mere chance or accident in God's Laws—they are perfect, elemental, and progressive, and successive in molecule, protoplasm, and cell growth into life. D. L. F.

NOTICE TO MAKERS OF MEDICINAL PREPARATIONS

In answer to many inquiries as to proper labeling for medicinal preparations to comply with the Food and Drugs Act as amended, the Department of Agriculture, through the Bureau of Chemistry, has issued the following suggestions to makers and proprietors of medicinal preparations:

1. **Claims of Therapeutic Effects.**—A preparation can not be properly designated as a specific, cure, remedy, or recommended as infallible, sure, certain, reliable or invaluable, or bear other promises of benefit, unless the product can as a matter of fact be depended upon to produce the results claimed for it. Before making any such claim the responsible party should carefully consider whether the proposed representations are strictly in harmony with the facts; in other words, whether the medicine in the light of its composition is actually capable of fulfilling the promises made for it. For instance, if the broad representation that the product is a remedy for certain diseases is made, as, for example, by the use of the word "remedy" in the name of the preparation, the article should actually be a remedy for the affections named upon the label under all conditions, irrespective of kind and cause.

2. **Indirect Statements.**—Not only are direct statements and representations of a misleading character objectionable, but any suggestion, hint, or insinuation, direct or indirect, or design or device that may tend to convey a misleading impression should be avoided. This applies, for example, to such statements as "has been widely recommended for," followed by unwarranted therapeutic claims.

3. **Indefinite and Sweeping Terms.**—Representations that are unwarranted on account of indefiniteness of a general sweeping character should be avoided. For example, the statement that a preparation is "for kidney troubles" conveys the impression that the product is useful in the treatment of kidney affections generally. Such a representation is misleading and deceptive unless the medicine in question is actually useful in all of these affections. For this reason it is usually best to avoid terms covering a number of ailments, such as "skin diseases, kidney, liver, and bladder affections," etc. Rheumatism, dyspepsia, eczema, and the names of many other affections are more or less comprehensive, and their use under some circumstances would be objectionable. For example, a medicine should not be recommended for rheumatism unless it is capable of fulfilling the claims and representations made for it in all kinds of rheumatism. To represent that a medicine is useful for rheumatism, when as a matter of fact it is useful in only one form of rheumatism, would be misleading; such statements as "for some diseases of the kidney and liver," "for many forms of rheu-

matism," are objectionable, on account of indefiniteness.

Names like "heart remedy," "kidney pills," "blood purifier," "nerve tonic," "bone liniment," "lung balm," and other terms involving the names of parts of the body, are objectionable for similar reasons.

4. **Testimonials.**—Testimonials, aside from the personal aspect given them by their letter form, hold out a general representation to the public for which the party doing the labeling is held to be responsible. The fact that a testimonial is genuine and honestly represents the opinion of the person writing it does not justify its use if it creates a misleading impression with regard to the results which the medicine will produce.

No statement relative to the therapeutic effects of medicinal products should be made in the form of a "testimonial" which would be regarded as unwarranted if made as a direct statement of the manufacturer.

5. **Refund Guarantee.**—Statements on the labels of drugs guaranteeing them to cure certain diseases or money refunded may be so worded as to be false and fraudulent and to constitute misbranding. Misrepresentations of this kind are not justified by the fact that the purchase price of the article is actually refunded as promised.

SERUM THERAPY OF SURGICAL STREPTOCOCCIC DISEASES.

M. Ssokolowa (*Muenchener medizin. Woch.* No. 26, 1914, pp. 1469). Polyvalent antistreptococcic serum was applied in 56 severe cases in 33 of which (60 per cent) there were metastatic abscesses. The dose employed in the beginning was 10-20 c. c. which in cases was gradually increased. Of the cases treated 27 recovered and 29 died, so that the mortality rate is 48 per cent. In the favorably running cases the temperature fell after the injection, then rose again only to decline once more after the next injection even lower than after the first injection. In diseases of bone the fall in temperature was more gradual. Simultaneously with the fall in temperature there was an improvement in the general symptoms.

The employment of the antistreptococcic serum is not hampered by contraindications; the pathological process is not influenced unfavorably through the injections and neither is there a local reaction. Anaphylactic symptoms were never observed, "serum disease" only once. While antistreptococcic serum is no specific, Ssokolowa believes that it is a very useful remedy in surgical streptococcic diseases.

ACTION OF ANTIPYRETICS ON PHAGOCYTES AND OPSONINS.

W. Perewoschtschikow (*Muenchener med. Woch.* No. 26, 1914, pp. 1469). In therapeutic doses quinine stimulates the phagocytic power of the leucocytes. In toxic doses it diminishes phagocytosis but the opsonins in the serum are increased. Antipyrin and pyramidon reduce, at first, the phagocytic coefficient, but after 24 hours the phagocytic power of the leucocytes is increased considerably, the diminution and increase being directly proportional to the quantity of the drug.

The opsonic power of the blood is influenced very little by antipyrin and pyramidon. Sodium salicylate causes, in moderate doses, a reduction in the phagocytic power of the blood, but after 24 hours there is a reaction—the same applies to the opsonins—followed by an increase. The administration of antipyretics not only produces an improvement in the symptoms of the disease, but the factors of protection of the organism in the struggle against the infection are strengthened.

INDICATIONS FOR GASTRIC LAVAGE.—Dr. L. Boas (*Universal Medical Record*) suggests that many physicians use gastric lavage in cases in which it cannot possibly be of service. Among these may be mentioned gastric atony, mucous gastritis, gastric neurosis, and even other affections, such as diabetes. According to Boas, repeated lavage is useful only in cases in which abnormal stomach contents cannot be evacuated through the pylorus and even then only if the obstruction cannot be influenced dietetically. It is thus not a dominant feature in the treatment of gastric disease but only a temporary refuge which should, as soon as possible, be replaced by other methods, surgical or dietetic. In many cases lavage can be replaced with benefit by simple expression of the stomach contents. The addition of antiseptics to the wash water is rarely worth while. Laxatives are most frequently useful, but even these can usually be given just as well without the use of the tube. In gastric fermentation or intestinal putrefaction Boas likes to give magnesium salicylate in doses up to one teaspoonful three times daily. It acts at once as a laxative and as an intestinal antiseptic.

NEW BOOKS

A Doctor's Viewpoint.

By John Bessner Huber, A. M., M. D., Editor the Dietetic and Hygienic Gazette; Author, Consumption and Civilization (Lippincott's); Fellow of the American Medical Association and of the New York Academy of Medicine, etc., etc. Gazette Publishing Company, New York, 1914.

In this little volume Dr. John B. Huber offers quite a number of his more interesting short writings. The book is soothing and well worth while.

Genito-Urinary Diseases and Syphilis.

By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor Journal-Record of Medicine; Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hospital for Nervous Diseases, etc., Atlanta, Ga., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second Edition Revised, 527 pages with 109 illustrations and 5 colored plates. Price, $5.00, net. E. W. Allen & Co., Atlanta, Ga.

The first edition of Ballenger's work on Genito-Urinary Diseases and Syphilis was of considerable merit and it can easily be said that the second edition, the one now under consideration, has been much improved.

The frank purpose of this book is to supply the general practitioner and student with a working guide, a work to which they can turn for solutions of the every-day problems of genito-urinary and venereal work. The average specialist in writing a book defeats his purpose by failing to bear in mind that the man for whom he is writing has but a slender knowledge of the specialty in question. Such a reader wants essential facts and easily applied knowledge. Herein lies the main value of Ballenger's book.

Edgar G. Ballenger is the author, assisted by Omer F. Elder and J. Edgar Paullen.

Medical Dictionary for Nurses.

A Medical Dictionary for Nurses, giving the definition, pronunciation and derivation of terms used in medicine, together with supplementary tables of weights, measures, chemical symbols, etc. Arranged with special reference to use by nurses. By Amy E. Pope, graduate of the School of Nursing of the Presbyterian Hospital, in the City of New York; special diplomas in education from Teachers' College, Columbia University, etc. G. P. Putnam's Sons, publishers, 1914. Price, cloth, $1.00.

The compiler says the purpose of this volume is to give the definition, pronunciation, and derivation of terms used in medicine, together with supplementary tables of weights, measures, chemical symbols, etc., arranged with special reference to use by nurses.

Diet in Health and Disease.

Diet in Health and Disease. By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth edition, thoroughly revised and enlarged. Octavo of 857 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00; Half Morocco, $5.50, net.

In this volume the authors, Drs. Julius Friedenwald and John Ruhräh, have placed at the profession's command a highly valuable work. All too little attention is paid to diet, either in health or disease, and to remedy this deficiency a work such as this should be studied. As an indication of the esteem in which this book is held by that part of the profession interested in the science of dietetics, it need but be mentioned that the present edition of this work is its fourth.

In the present edition has been incorporated a section on the mechanism of digestion. The chapter on metabolism has been largely rewritten. An interesting as well as valuable section is that devoted to the consideration of diet in gout and diabetes. The subject of infant feeding has been brought up to date.

The general practitioner may consult Friedenwald and Ruhräh with confidence that they will give him dietetic information of a practical character and which can be applied in his routine work.

Essentials of Prescription Writing.

Essentials of Prescription Writing. By Cary Eggleston, M. D., Instructor in Pharmacology, Cornell University Medical College, New York City. Thirty-two mo. of 115 pages. W. B. Saunders Company, 1913. Cloth, $1.00, net.

The expressed purpose of this small volume is to provide the student of medicine with a concise, but withal sufficient, treatment of the subject of prescription writing. It is a crystallization of the author's experience in teaching the subject, which in most quarters is a neglected one. Even physicians long in the harness could profit by a study of the little book.

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ENTEROLITHS

By J. D. Bloom, M. D., New Orleans, La.

What is called intestinal sand does seem in its physiological characteristic to be a reversionary process of the epithelium function in that it is more active when existing in the colon or rectum—akin to the eggshell formative process that we find in birds. Intestinal pockets or sacculations with an organic nucleus supplement the needs of this formative process that the calculous salts further.

Intestinal sand is said to consist of calcium phosphate, calcium carbonate, magnesium phosphate, moisture and organic matter.

In ruminants an enterolith, the so-called bezoar, is found in the stomach and intestines usually spherical or oval in shape. It is regarded in divisional origin as of the Oriental, Occidental and German, of which the Oriental is a supposed panacea or especially efficacious in offsettng the fatal effects of poison and is so held in estimation in some Eastern countries. They are used in China as a drug today. As a common find in the Herbivora, intestinal concretions are a deposit of salts in the intestinal fluid about a nucleus, which, as a rule, is some foreign body. That this nucleus is a varied one is true, as it may consist of a piece of food, hardened excrement, or a foreign body that has been injested, even some albuminous particle or coagulum of blood, too, a biliary calculus. In color, they are of a slate or greyish hue and may be exceedingly large in size, of weight that reaches several pounds. Ammonio and magnesium phosphates, fatty or matter that is albuminous with the carbonate and phosphate of calcium enter into its composition. They are always regarded as curiosities in that they represent an altered function. In location, they have been found in the rectum, cæcum, sacculi of the colon and small intestines. In the human, when found, they number one or more and it does seem that the continued use of a mineral medicament, as chalk or magnesia, have this disposing tendency. Emaciation and abdominal discomfort follow in the wake of their presence, and actual obstruction, that is rare, has been shown to occur only after a long time.

In Fowler's investigation of 169 cases of appendicitis he found in the appendix only two foreign bodies, one of which was a true enterolith and the other a gall stone, speaking for the infrequency in this situ.

Enteroliths are either very hard, soft or porous or an aggregation of medicinal substances. They are rare and a curious formation, and are more frequently found in the rectum and colon, even when in this location are not of a large size. It is true that gall stones and those pancreatic may enter the small intestines and form as a nucleus, though substances introduced through the mouth must receive a primal thought. Inspissated mucous and indigested food products may form the nucleus, though the deposit in the majority

of instances has been found to be of the calcium and magnesium phosphate. The eating of oatmeal is said to occasion this form of nucleus. In animals given to licking their own coats and the coats of other animals, balls of hair are found in the intestines.

The case in point from which the pictured stone was removed, a lady of refinement, by birth and position, suffered from intermittent attacks of abdominal colic that in the last in-

stance culminated into a condition of intestinal obstruction. How long she had been complaining was not definitely determined.

The condition of intestinal obstruction, from what could be gleaned, had existed some days before I saw her and counselled operative interference; not knowing or even suspicioning the exact cause. On the day following my visit the operation was performed and the stone found in the ileum about six inches from the ilio-cecal valve, occluding the entire lumen and firmly impacted. She had become markedly weakened by her long food deprivation and scarcely reacted from the procedure, though the stone was readily found and removed. Its size and location make it seem uncommon.

The sacred sentiment with which the stone is associated by the family, forbear anything like a section or more than a photograph, for which I feel thankful.

Even in the sane, there are found in the intestines articles of diet such as fruit stones, small bones or fragments of same. The insane, of course, have, by their method of doing, the cause original without a measure and only the result is to be reasoned. The female, peculiarly, is more frequently the victim of intestinal gall stones, though as a condition, it is rarely found under forty years of age. The stone finds its way, frequently, by ulceration into the third part of the duodenum from the gall bladder fundus or through the natural channel of the common duct. In the more frequent instances and particularly where intestinal trouble results, speaking for a stone of some size, the entrance to the bowel is most probable by the ulcerative process. Such an effect must associate a peritoneal involvement as well as an affection of bowel through the entrance of the sized concretion, and a possible secondary effect from adhesions. In the instance herein reported, the mechanical obstructive effect was the only known active symptomatology and is of the nature of all cases that have an emergency aspect, involving in a causal way the occlusion of the bowel lumen. In this instance, the stone was very large, but, as often is the case, the size has not proved a factor in itself, as quite as large stones are known to have been passed without a trouble of any seriousness. It is possible that a sluggish peristaltic action contributed to the seriousness in this instance or its location, as a record instance is given where a stone 3¼ inches in circumference in its thickest part was passed per via naturalis.

A free and prolonged use of a mineral substance or of some salt contributes to its formation; then, too, they are more frequently met with in the large bowel, which reasons for the infrequence with which they are called to surgical attention.

A physiological reversion does not represent a function that is in error as much so as one that is, in merit of its effect, not provisional on a life individual.

1215 Maison Blanche Bldg.

In selecting a climate for an asthmatic, it must be determined which of the causes it is most important to remove, as one climate excels another in its influence over one or more of these causes. It is impossible, in actual practice, to separate these causes and to treat each in its appropriate climate; but it will perhaps be well to try to explain why so many different climates and conditions are good for asthmatics, and to assist in making the best possible compromise when a climate is finally chosen, thus causing the selection to be less empirical and experimental than it usually is.

Supposing that the necrosis is the cause to be especially remedied; the climate must then be chosen for its quality of sedation or stimulation. If the hyperesthesia is apparently innate in the individual and customary to him, and is not brought about, or largely aggravated, by anemia or some other depressing cause, a sedative climate is generally most beneficial, because it modifies the neurotic habit. Further, as the catarrh or chronic inflammation of the respiratory tract is, in what is termed a born neurotic, usually of the irritable or inflammatory type, a climate of a sedative character, in which the air is warm, humid and equable, would be the most beneficial; but the climate selected should also possess tonic qualities in proportion as the respiratory condition permits a lessening of this warmth and humidity and consequently of climatic equability. If there is chronic anemia, a stimulating climate, cooler, drier, and more variable would be preferable.

In young children with lacunar inflammation, the tonsillar enlargement may be so great as to cause embarrassing dyspnœa and complete inability to take nourishment. Under these circumstances it is advisable to remove at any rate one tonsil, but under no circumstances should amputation of the tonsils be undertaken whilst they are acutely inflamed.

THE ARRIVAL OF THE GENERAL PRACTITIONER

By HENRY S. MUNRO, M. D., Omaha, Neb.

The pendulum of medical progress is now swinging back to the cause underlying gross pathology. The general practitioner has come through the work of the psycho-pathologist, who brings us genetic psychology; through the physiologist who has revealed the marvels of the internal glandular secretions; the physiological chemist, who chases an atom of starch or protein through the human organism until it is lost in oblivion; all showing that the problems of the transference of energy in plants and animals are bound up in close relation with the mighty circulation of solar energy, which underlies the metabolism of all living organisms. The living human being and his internal and external activities, psychic and physical, and their relation to health and disease is what concerns us as physicians.

The barriers which separated the sciences have fallen, one after another, thus revealing the unity of life. Science is enlightening our darkness and showing us miracles, plain, everyday happenings in our professional work. The trite saying of Swedenborg is now demonstrating its veracity: "A man's mind is the man himself."

The work of the physician is concerned with the problems of health and disease. The beginning of successful treatment is with a correct diagnosis. When the cause of a disease is found, the desired end is already in sight, provided we are prepared to employ the appropriate remedy. There are few cases, save in the diseases of infectious origin, in which psychic-pathogenesis, psycho-physical diagnosis and psycho-physiochemic treatment does not deserve due consideration.

We now have a scientific method of detecting the psychogenetic cause or psychic origin of the pathological bio-chemical changes accompanying disorders of metabolism associated with functional, nervous and mental diseases, and a practical method of mental and physical reconstruction as well.

We have a scientific and efficacious means of restoring functional activity, of re-establishing immunity, of heightening the resistance of the composite individual, and thus of successfully treating not only the psychoneuroses, but the incipient disorders of metabolism associated with diseases of the gastro-intestinal tract, of the circulatory apparatus, of the glandular organs, and in diseases of the lungs, heart, kidneys, liver, generative organs, skin, blood, muscles, and with diseases of the mind and nervous system as well.

By these measures functional efficiency is perfected, vitality restored, and health, strength and happiness regained for your patients. By these measures a new world is opened up to many sick, distressed and miserable people, who have sought in vain for relief by the measures formerly employed, such as by the exclusive use of drugs, hydrotherapy, massage, dietetics, etc.

We accomplish our results, in part, by a direct appeal to the intelligence of the patient, through which we detect and re-condition the pathogenic psycho-physiological mechanism responsible for his symptoms. We thus bring about a cure by or through his enlightened understanding of the cause and its consequence, thus giving him cure for the present and prevention for the future.

PSYCHO-PHYSIO-CHEMIC TREATMENT stands unparalleled for its success in the treatment of all forms of disease, except those so far advanced that the organs and tissues are already destroyed. This mode of treatment is not intended to supplant the field of surgery, or of taking the place of mercury, salvarsan, quinine, antitoxin and allied measures, which serve so well the needs of their own particular indications, *all of which are a part of our armamentarium.*

No more faith is demanded of the patient than that he seek our aid for relief with a desire to get well. If he gives us a chance to go into his individual abnormal psychology and to detect and remove the cause of his pathological physiology, or abnormal bio-chemistry, all of the interest required is forthcoming and spontaneous—provided he has the inherent psychophysical potentialities sufficiently approximating the normal intelligence to be of worth, or to deserve our effort.

We must take our patients as they are,

however, and equip them to make the best of their potentialities, be these much or little, weak or strong. Among many people of "high grade" are found the psychoneuroses, psychasthenia, and the undifferentiated depressions, epilepsy, incipient dementia praecox, melancholia, the manic depressive states, and other "border line" cases. In this class of diseases the field is white unto the harvest, and the general practitioners who are able to efficaciously treat these patients have hardly begun upon the scene—due to no fault of their own, but to the lack of teaching of clinical psychiatry by our former one-sided system of medical education.

At the present time the hospital is made "The Unit of Medical Education." Here only, or mostly, pathological end results are diagnosticated and treated. The mature diseases, or ripened fruit, have "already arrived." This, I believe, is the weak spot in medical education, since it forces the men turned out to be feeders for "the hospital machine."

Sir James McKenzie (*Brit. Med. Jour.*, Jan. 3rd, 1914), takes the stand that our present methods of instruction teach physical signs only, or at least chiefly, and that herein they are defective from the viewpoint of the practitioner. His teaching is, as the editor of the *New York Medical Journal* points out (February 21, 1914), that disease is usually well advanced when it is productive of physical signs, and that it should be our endeavor to learn how to make a diagnosis of a disease when it is in its incipiency—that is, before organic changes have taken place, with the consequent appearance of physical signs. His contention is that the general practitioner is constantly encountering disease in this early and perhaps curable stage, but that all of his training has taught him to seek for physical signs, in the absence of which he is at a loss to know how to treat the patient or to make a diagnosis.

The Editor of this Journal further remarks: "There is no doubt in our minds that both of these aspects of the teaching of clinical medicine deserve serious consideration. Many of us are often personally aware of defects in our methods and teachings, but shrink from taking the initiative for their correction and rather await some external stimulus."

That the instinct of self-preservation, under our competitive system of medical education, has prevented our schools from equipping their graduates to treat functional disorders in their incipiency, so as to prevent their falling into the hands of those who derive large profits from hospitals, is, no doubt, the cause of the slowness of our medical schools to step forward in pace with the knowledge now available in the treatment of the incipient disorders of metabolism, or functional disorders, which, if neglected, are sure to result in gross physical manifestations of disease, and insanity as well.

This neglect, however, has made it possible for the various legalized cults to invade our field to the detriment of the best interest of the medical profession and to the hurt of the larger social organization. Also thousands of useless advertised nostrums have been put upon the market by drug manufacturers, who are keen enough to take advantage of the unsatisfactory equipment of the physicians over all sections of our country, and in all parts of the world.

The more recent developments of psychological diagnosis and treatment, or of psycho-pathogenesis and psychotherapy, as the result of the combined efforts of numerous capable physicians in Europe and America, have given us an insight into the pathogenic mechanism underlying the functional disorders, both mental and physical, which together with a better understanding of physiological chemistry and chemical pathology, opens up an entirely new and more scientific outlook for "the man in the field," and it is only for the physician in general practice to be prepared to detect and to treat functional mental and physical disorders by scientific methods now available, when he will truly "come into the possession of his own."

According to a well known statistician, tuberculosis claims 154,000, heart disease 150,000, nervous and mental diseases 138,000, pneumonia 132,000, gastro-intestinal diseases 123,000, genito-urinary diseases 111,000, with 182,000 deaths from accidents and 75,000 deaths from tumors of all kinds, to say nothing of the ever-increasing roll of those who take refuge in our institutions for the insane, and the large mortality list from suicide and murder.

All of these conditions leading to death, insanity, suicide and crime, are of common origin, as viewed in the light of our pres-

ent knowledge of abnormal psychology, perverted physiology, or pathological biochemistry. These diseases begin in functional psycho-physio-chemical disorders, which, if neglected, lead to the development of gross pathology, or abnormal conduct, or so-called insanity, and they are amenable to diagnosis by methods now available to every practitioner of medicine. They are, when taken in their incipiency, easily cured by appropriate psychological, physiological, and physical reconstructive measures.

Functional disorders prepare the soil for diseases of infectious origin, and the cause of these functional disorders can only be detected by psychological tests and psychologic inquiry, and they may apply to "functional disorders" in which there appears no outward abnormal manifestation, save that the patient complains of feeling unwell, and seeks aid from his physician. They may manifest themselves by disorders of conduct on the part of the individual, depending upon the severity of the abnormal psychic element of the disease. His psychic fixation or "complaint" may be on some bodily organ or part, such as stomach, viscera, heart, lungs, back, kidneys, genital organs, eyes, tonsils, nose, ears, vocal organs or skin, or they may be expressed as "nervousness," his "complaint" indicating some physical manifestation of disease, which is perhaps erroneous from one viewpoint, but strongly indicative of a sick patient needing intelligent medical assistance from another.

The fact is there are no diseases that can properly be called psychic or somatic, since both physical and psychic components enter into the make-up of every human being and of every disease process. Rational diagnosis and treatment consist of an intelligent understanding of genetic psycho-physical pathology, and in bringing to the aid of the intelligence of the patient such knowledge as will restore his nervous and mental equilibrium, re-establish functional activity, heighten the resistive powers of the cells of the entire organism, as well as in the employment of chemo-therapeutic agents that will destroy the life of invading parasites, when present, and thus of bringing about a cure not only of present conditions, but of re-adapting the individual to life by appeal to his intelligence that "treatment" constitutes prevention for the future.

506-8 Brandeis Theater Bldg.

A BACTERIOLOGIC STANDARD FOR PURE WATER.—"No one knows better than the experienced student of water bacteriology," says *The Journal of the American Medical Association,* "that the establishing of any standard opens the road to abuse and misconception. But it is of great advantage to have a definite standard proposed which can be discussed, compared with the varying experiences of different observers, and serve as a guide for interpreting the routine analyses which are sometimes accumulated without much understanding of their true significance."

McLaughlin, in an article on "The Necessity for Restriction and Control of Sewage Pollution," in the same issue of *The Journal,* suggests that a content of two *B. coli* per hundred c.c. be accepted tentatively as the limit permitted for a good drinking water. He points out that at present a number of filter plants dealing with a badly contaminated raw water are able to yield a water which comes up to this standard. "Although the commission appointed by the Surgeon-General of the United States Public Health Service to consider this matter has not yet made its formal report, we understand," *The Journal* continues, "that its recommendations coincide with the standard proposed by McLaughlin, who, perhaps, has based his own opinion somewhat on the discussions of the commission. While this is not so severe a requirement as that advocated by Houston, director of water examination of the London Metropolitan Water Board, it is, nevertheless, more rigorous than would have been advanced in this country a few years ago. Sooner or later the question will arise in connection with such standards as to how far the community is willing to go in the matter of protecting itself against water-borne infection. The question will eventually come down to the expenditure that will be deliberately made in order to escape a given degree of danger. It is physically possible to sterlize absolutely any city water-supply, but few cities are prepared to face the expense necessary for complete removal of bacteria, pathogenic and non-pathogenic. McLaughlin's very interesting and suggestive paper dealing with the degree of permissible sewage contamination of raw waters and the allowable minimum of purification will tend to form opinion on this practical problem."

THE TOPICAL USE OF TINCTURE OF IRON IN CUTANEOUS AFFECTIONS

By H. H. SEELYE, M. D., Daytona, Florida.

The astringent effect of the local application of the tincture of the chloride of iron in certain cutaneous affections has been frequently used by me with success where other generally employed measures had met with failure. So much so that it is now my first thought, and often the only measure needed, when confronted by an itching eruption on a raw and inflamed surface.

The observation of its effect when used on the irritable, swollen and sometimes ulcerated tissue of the great toe so commonly following the prolonged pressure of an ingrowing toe nail, first suggested to me a trial of its virtues in other conditions. I had found that a swabbing of the inflamed area with the full strength tincture every night resulted, after two or three days, in a drying up of the purulent secretion, an obtunding of the sensitiveness and a thickening and hardening of the underlying skin, so that it soon became possible to cut off with scissors or a sharp knife a large piece of the adjacent offending nail. Then by occasional after treatment the skin became so tough that as the nail slowly grew out to perhaps less than its original size it was able to withstand the pressure without again causing sensitiveness or ulceration of the tissues. Moreover the caustic effect of the acid seemed so far to destroy the vitality of the matrix of the nail under the part removed, that the renewal of the growth of the nail was checked, so that the liability of the return of the trouble was markedly lessened. This has been my invariably successful treatment of ingrowing toe nail for many years, and the instigation for experimenting with the iron solution on its wider use in other skin affections where inflammation and over irritability were prominent characteristics. One seeming disadvantage in its use must here be considered and guarded against, namely, the prolonged painful and burning effect induced when applied directly and in full strength for the first time to a raw or abraded surface. On the sound skin no such action is apparent, but if the epidermis is broken the suffering is for a considerable time intense. So to prevent this as much as possible a strong solution of, or powdered, cocaine should be used and a watery, diluted solution of the tincture then be employed. After the first application has ceased to burn the subsequent use of the tincture in full strength rarely causes any pain.

A few years ago a lady applied to me for treatment of a vesicular eruption of the foot accompanied by great pruritus and erythema of the skin from the toes half way to the ankle. I tried many antiseptic washes and ointments with no improvement but a gradual spreading of the affection. When in despair of relieving her I thought of the muriated tincture of iron. Its benefit was apparent at once. The itching ceased, the vesicles dried up, the erythema disappeared and in a few days the treated skin desquamated, leaving a perfectly healthy cuticle beneath. At intervals for two or three years after, there would be an attempt at a recrudescence of the trouble, but the moment a vesicle appeared she was directed to prick it and apply the iron solution, which at once aborted the attack, and it has never since had a chance to recur. The same treatment, I have found, never fails to cure soft corns or the cracks that so often appear between the toes of people with moist or tender skin. Hard corns and bunions are likewise dried up, devitalized and made less sensitive. Eczematous conditions of the skin generally are amenable to this remedy. The moist surface is dessicated, the air excluded, the pruritus obtunded, and if the treatments are repeated the epidermis ultimately desquamates, leaving only a soft, healthy-looking skin beneath. I have found numerous such cases to yield to this treatment that were obstinate to other approved methods.

Not long ago I was consulted by a lady who had been afflicted for many years with an eruption on the inner side of the forearm just above the wrist, about two and a half by four inches in area, that consisted of a thick, leathery, vivid-hued patch, dotted with numerous pea-sized bulbous enlargements made raw on top by persistent scratching, even during sleep. She was one of those rare individuals with an idiosyncrasy for eggs, the smallest quantity of which had for years been liable to cause an urticaria or a swelling of the pharynx. She had been told that the wrist eruption was due to some similar dyscrasia of the blood and was incurable, as all imaginable internal and external treatments had been tried in vain. She reluctantly permitted me to attempt its cure. I supplied her with a small bottle filled with the tincture of iron to which had been added an equal quan-

tity of dilute phosphoric acid which so far discolorized it as to leave a hardly noticeable stain on the skin. This she swabbed over the patch twice daily, allowing it to dry on. For a few minutes it aggravated the itching, but this soon ceased and the irritating scratching was stopped. In a few days the redness and inflammatory appearance had greatly diminished and the raw tops of the bullæ were healing. After about ten days I had her use the tincture full strength for a week or more and as the irritation had then ceased the applications were cut out and the patch left to peel. In another week the exfoliation of the dried up epidermis was complete, and only an inconspicuous blush on a healthy looking skin was left to show the former seat of this obstinate malady. There has been no return and the wrist no longer has to be concealed from curious gazers by the bandages and covering that had for so long veiled its disfigurement.

Lately a young lady consulted me for an itching eruption on her hand and forearm, which for a few weeks had annoyed her by the sudden and intermittent outcropping of papules of an herpetic appearance that would itch immoderately for a few days and then perhaps disappear. She showed me a crop of twenty or more such papules which might have been confused with scabies had it not been for their irregular distribution and her irreproachable respectability and neatness. I gave her a prescription for equal parts of tincture of iron and dilute phosphoric acid to apply to each papule with a swab of cotton on a toothpick three times a day. When I saw her a week later she said that the applications had at once stopped the itching and the spots had all disappeared with no new ones since.

A gentleman came to me showing a profuse pustular eruption on both hands, covering the fingers and a large part of the back of the hands and all of the palmar surface up to the wrists. Each pustule was distinct and of the size of a number six or eight bird shot. There was no inflamed base or surrounding areola, but the fingers and hand were slightly swollen and stiff, while the pruritus was intense. There were as many as two or three hundred little pustules on the two hands. They had first appeared four or five days before and had rapidly increased in number and because of the irritation he had been unable to sleep at night. Washes first prescribed by a druggist and later by a physician, had done nothing to alleviate his suffering, and the hands were now a startling sight to behold. In the last two days half a dozen similar pustules had appeared on the face and forehead. There had been no fever or other constitutional disturbance. The only probable cause seemed to be a local infection from the frequent use of the pocket handkerchief soaked with profuse purulent secretion from the nose, resulting from an operation some months before on the bony septum and turbinates. For treatment I at once opened with a knife point a number of the larger pustules and then painted the hands over with the pure tincture of iron. This was quite painful for a few days but later the itching ceased. The next day only a few new pustules had appeared and many more were then opened with the knife and the whole again painted over. This was repeated for three or four days and the effect was to harden and dry up the epidermis and stop the itching. In about a week the deadened epithelium exfoliated, leaving a healthy normal skin beneath. Of course the use of a handkerchief was prohibited, paper napkins to be used once and then burned, being substituted. The few pustules on the face were evacuated and the base cauterized with pure carbolic acid, which discolored less than the iron and caused them to soon dry up. An antiseptic ointment was prescribed for use on the face and forehead to prevent further infection. I know of no other application that would have proved as satisfactory in this case as the local use of tincture of iron.

Another elderly gentleman suffering from sciatica, and obliged to lie down almost constantly on his back, had developed about a month before consulting me, an intensely itching, angry looking eruption about eight by three inches in area, spindle-shaped, where a long scar showed the location of a subcutaneous tumor that had been cut out two years before. Constant pressure on this area of lowered vitality had induced a psoriasis-like eruption, dotted over with papules and bullae on an inflamed and intensely itching base, which was constantly growing larger. The use of ointments and lotions had given only very temporary relief while failing to check its headway. After painting the whole area over with the tincture of iron the pruritis and tenderness were increased for several hours so that a sedative was necessary to permit of sleep. The next day the trouble was less and a second painting caused only a brief uneasiness. After that the treatment was repeated daily for two or three days more without inducing any discomfort while the pain

and itching had entirely ceased. After about a week desquamation removed the tanned outer layer of the derma and a healthy normal appearing and feeling skin was exposed. all hyperesthesia having disappeared. I doubt if any other local treatment would have induced so rapid and complete a cure.

My experience with this agent in the treatment of small and indolent leg ulcers and the unhealthy looking skin adjacent has led me to rely on it for stimulating and shrinking the parts. But in these cases cocaine must be freely used and the tincture at first be largely diluted with from four to eight parts of water.

As to the method of cure by this remedy, it is doubtless due to a combination of the astringent and caustic properties of the iron and acid, the latter acting possibly also as a parasiticide, aided by the tanning or impervious coating of the outer layer of the skin shutting out the entrance of air to the follicles below, which perhaps are infested by aerobic bacteria that are thus rendered too attenuated to live or reproduce themselves.

Having often taken note of the obtunding of the sensitiveness of raw surfaces after the repeated use of dilute solutions of iron, I was some years ago inspired to try its effect on the mucous membranes. I had several cases of irritable throat with dry nervous coughs, or with more or less profuse mucous or mucopurulent secretion. Some of these had persisted for ten or more years, often disturbing the sleep and always annoying. Sprays, cough mixtures and various local measures had failed to relieve them. Yet invariably all were at once benefited, and in two or three weeks cured, by spraying the tincture of iron into the pharynx, or nebulizing it so as to reach the epiglottis, larynx, and bronchial tubes. First treatments should here be with the tincture largely diluted, as it seems often to at once aggravate the cough. But tolerance is gradually established, till soon stronger sprays may be used, and at length full strength is attained with permanent loss of irritability and complete cure of the cough. So, too, catarrh of the nose may be dried up, and tonsillitis, pharyngitis, vaginitis, and all mucous membrane hypersecretions aborted, as my experience has often proved. When spraying the throat, it is well to instruct the patient to swallow the medicine with the saliva, as its entrance into the stomach cannot be otherwise than salubrious and tonic.

One might suppose that in dermatological practice the tincture of iodine would have equally as good an effect as the iron, since it is so notably bactericidal and astringent. But when I have tried it I have often been disappointed and have later been immediately gratified by the results of the substituting for it of the tincture of iron. When using this preparation it is always wise to have a bottle of dilute phosphoric acid at hand, not only to decolorize it when to be used on a conspicuous part of the person, but also to remove the stain from any clothing or handkerchief that may have been soiled by the inadvertent dropping on or smearing of them with this otherwise permanently disfiguring agent. The phosphoric acid immediately changes the chloride into the colorless phosphide of iron, which may then be washed out with a little soda or clear water. A slight excess of the phosphoric acid is requisite to completely neutralize the color of the iron solution, but it also seems to detract somewhat from its therapeutic efficiency and prolongs the burning. The pure tincture can be used to greater advantage over large surfaces where it will not offend the sight. My experience would suggest its employment in many other forms of imperfect functioning of the skin, such as localized hyperidrosis or excessive perspiration of the axilla, groin or feet, where its astringent and drying action should retard the excessive activity of the sudoriferous glands, while its antiseptic and air excluding properties would suggest its replacing iodine, ichthyol, etc., in erysipelas, boils, carbuncles and the like.

We are all prone to make use of a too extensive pharmacopoea, and, in trying to keep in mind the numerous new remedies proposed, are apt to overlook the virtues and claims of some of the older and inexpensive drugs that are often neglected because we are supposed to have long been familiar with all their properties. The tincture of the chloride of iron is one of these, which not only has tonic, appetizing, blood purifying and opsonic index raising properties when used internally, but also the stimulating astringent, obtunding bactericidal and air excluding protective qualities of an external remedy, which may often replace to advantage some of the newer and more frequently used dermatological applications.

A condition of "cystitis" which does not improve under nitrate of silver, but which grows worse, is either tuberculous cystitis or pyelitis. The cystoscope is essential to the making of the diagnosis in doubtful cases.

SUPRAPUBIC PROSTATECTOMY BY MORCELLEMENT

By D. W. BASHAM, M. D., Wichita, Kan.

There are many cases of chronic hypertrophic prostatitis that are not amenable to the ideal procedure of enucleation, whether the operation be attempted by the high or low method of approach. It is for these cases alone that I reserve the beneficent operation of morcellement.

Fortunately, the enlarged and diffusely inflamed organ, which has become indurated almost to cartilaginous consistency and inseparably coalesced with its capsule so that enucleation is no longer feasible, may be efficiently dealt with by morcellement.

Every surgeon whose experience is at all extensive must have encountered cases of this description and has been obliged to abandon the complete operation if attempted by the ordinary method.

The operation for the removal of the hypertrophied prostate by morcellement was much practiced by the late lamented Alex Hugh Ferguson, who operated through the perineum. It was from him that I obtained the idea of dealing with the prostate by this method. After several operations by the perineal way it occurred to me that morcellement was equally applicable from above.

As by far the larger proportion of cases are readily amenable to enucleation by the suprapubic method, the operation of morcellement is reserved for the occasional case only. With the help of this method all cases of hypertrophied prostate may be treated by removal. The Ferguson forcep, as devised by him for the perineal method, is sufficient for the suprapubic operation. In the case of obese patients, however, it is of advantage to have the length of the handles increased.

The ordinary suprapubic incision as employed in enucleation of the prostate serves as well for morcellation. It is rarely possible to know that the case must be dealt with by morcellement before the bladder is opened and enucleation has been attempted. As soon as it is found that enucleation is difficult or perhaps impossible, prolonged efforts should not be made, but the operation should be terminated by morcellement.

In the operation of enucleation the operator himself supports the prostate with two fingers in the rectum. In the operation by morcellement it is necessary for the assistant to support the prostate with two fingers in the rectum, for the operator is obliged to use one or two fingers of the left hand as an intravesical guide to determine the portions to be seized by the morcellation forceps. It is almost necessary to do this operation by touch. With practice it becomes easy to locate the nodules of prostatic tissue with the tip of the left index finger and seize and remove them one after another with the Ferguson forcep. It may be necessary to enter the bladder many times with the forcep to complete the operation.

There is less hemorrhage after morcellement than after enucleation. That condition denominated prostatic collar or prostatic bar may be best overcome with the morcellation forcep. There is but little danger of damage to the bladder walls, because in the class of cases to which this operation is applicable the capsule limiting the gland has become so dense as to resist the action of the forcep. This property of resistance in the capsule makes it easy to seize the glandular nodosities one after another until the field of operation is smooth to the touch.

Cases operated upon by morcellation usually do better than those operated by enucleation, because there are not so many ragged fringes of vesical mucosa left floating in the bladder. There is less postoperative hemorrhage, as well as less hemorrhage at the time of operation, because the vessels are closed by the action of the forceps instead of being torn in two, as happens in enucleation.

Drainage is employed, but irrigations during the convalescence have been found entirely superfluous and oftentimes positively harmful.

In the fermentative form of chronic gastric catarrh the hyperacidity is, in reality, often dependent upon the lack of HCL; hence this agent should be supplied. It is best administered immediately after meals, the dose being not less than ten minims, well diluted, and this may be repeated in the course of ten or fifteen minutes in obstinate cases.

GLYCERINE

By D. L. FIELD, M. D., Jeffersonville, Indiana.

A man, who had been a sufferer with distressing acidity of the stomach, read in a paper that glycerine would prevent milk from souring, and he said, if it would keep milk from getting sour why wouldn't it keep him from getting "sour". He tried it and found it a great success; whenever tormented with pyrosis he resumed the glycerine.

It is a well known fact that glycerine will act well in fermentation. A drachm in a little water before meals will prevent eructations and "sour stomach".

In catarrhal conditions of the stomach, the writer prescribes:

Fluid Hydrastis, colorless.....
Glycerine .....āā ℥ij
Acid Carbolic ..... Mxvj

M. Sig. Two teaspoonfuls in water, before meals. F.

The above, containing one minim of carbolic acid, acts as an anesthetic where there is pain. Right here I wish to tell of a mistaken diagnosis of the writer's and a professional colleague. My professional brother treated the patient, a woman in his home town, for cancer of the stomach. She removed to this city, Jeffersonville, and was bedfast, with pain in the stomach, nausea, and inability to retain even water. She vomited frequently and the mucus was dark, "coffee-ground" color, and very offensive. Even the odor about the bed was so offensive to myself, as well as to her, that I used a deodorizer, with an atomizer. I gave morphin hypodermically to ease the pain. Finally, in order to correct in a manner the foul odor of her breath, I gave one drop of carbolic acid, one drachm of glycerine, in a dessertspoonful of water, every three hours. To my surprise and satisfaction she retained the medicine. I persevered in the remedy and finally the pain ceased, without the use of morphin. Later, the nausea ceased, and I began, carefully, to give her milk and lime water. I continued the carbolic acid and glycerine three weeks. She gradually retained other food, and is today eating everything she pleases, and her stomach is all right.

This case occurred several years ago and, so far as I know, the woman is still living—and the last time I heard from her she was able to digest boiled cabbage. Now, what was the matter? It was a peptic ulcer and the persevering use of carbolic acid healed it.

DRUG HABIT

"They are drunken, but not with wine; they stagger, but not with strong drink." *Isaiah.*

The use of opium, heroin, morphine, chloral, and cannabis indica is still very prevalent, and it is surprising how many are using cocaine. I have had to refuse prescriptions for cocaine, especially among negroes, who are much addicted to its use. They call it the "jerking medicine".

The law in Indiana, and several other states, makes it fineable to prescribe any of the above agents to a drug habitue. Some laudanum drinkers are in such a state that it is cruel to refuse them—as they suffer the tortures of the damned if they cannot get it. I provide one old lady with a number of prescriptions at one time, as she would die if she could not obtain it—having used the drug for years. No prescription for such things can be refilled. A new one must be procured. There are physicians who use heroin, cocaine, etc., and it takes an expert observer to detect its influence on them. I know a doctor who has been using a drachm of morphine a week. How he gets it now is a mystery. He must send for it from the manufacturing chemists. He has reached that point where his practice has entirely vanished. Another M. D. is an habitual user of one-twelfth grain tablets of heroin. How they get into such habits no one can understand.

It is a delightful habit to some, but it is sickening to others. There are, fortunately, a large majority of people who have an idiosyncrasy to any kind of anodyne. Doctors should be careful in the use of the hypodermic syringe, as the laity invariably associate it with the administration of morphia. There is hope for a whiskey drinker, but for a morphine user there is none!

ABSTRACTS

PRINCIPLES OF CRIMINAL ANTHROPOLOGY. —Dr. Arthur MacDonald (*West Virginia Medical Journal*), concludes as follows:

Criminal anthropology is a recent line of research. It includes the study of man mentally, morally and physically, and necessarily depends on the results of many sciences. It is therefore distinctively synthetic in character. Criminal anthropology affords more opportunity for persons of ability to carry out the highest ideals than any other branch of inquiry.

The following are some of the principles of criminal anthropology, or what might be called its platform:

1. Degrees of criminality should be estimated according to detriment to the community. From this point of view international crime or war is by far the greatest of all crimes.

2. History is mainly history of the abnormal, especially war, and one of the objects of criminal anthropology is to lessen and prevent war. Montaigne says: "It is more barbarous to kill a live man than to roast and eat a dead one."

3. The greatest of all studies is man, which is based upon the individual, the unit of the social organism.

4. If the study of civilized man is to become a science it must depend upon investigation of large numbers of individuals, and the method should be the same for all classes if we are to distinguish between the normal and abnormal.

5. The best method of study for criminal anthropology is that of the laboratory in connection with sociological data.

6. The thorough investigation of *one* human being with the means at the disposal of science would make a volume.

7. All facts about human beings are important from the scientific point of view, whether those facts be immediately available or not.

8. All that is diseased is abnormal, but not all that is abnormal is diseased; thus a hand with six fingers is abnormal, but not necessarily diseased.

9. We must study the normal to comprehend the abnormal.

10. When the normal acts in an unsuitable way, or at the wrong time or place, it may become abnormal. The fundamental conception of the abnormal is *excess* of the normal; but

11. The difference in degree between the normal and abnormal can be so great as to result in a difference of kind; just as when two fluids reach a certain amount a precipitate is formed which is very different from the ingredients from which it was deposited.

12. Abnormal man may be abnormal in the right direction, as genius man, talented man or statesman; or in the wrong direction, as criminal, pauper or defective man. It is all *man*, and the study of these different classes might be called the anthropology of the living as distinguished from prehistoric anthropology.

13. Of all forms of abnormal humanity crime is nearest the normal; the study of criminals, therefore, is mainly the study of normal men, and knowledge gained may be generally applicable to the community as a whole. Therefore,

14. The prison and reformatory can serve as a humanitarian laboratory for the benefit of society. As the surroundings of the inmates are similar, conditions for scientific research are favorable.

15. As in machinery we first repair the parts out of order, so in society we first study the criminal, pauper, insane, feeble-minded and other defectives, all of whom constitute about one per cent of the community. But

16. Why should we allow one per cent of society to cause so much trouble and expense to the remaining ninety-nine per cent, crime alone costing more than one-half billion dollars annually? It is mainly because of neglecting the young, where study of man should begin. For

17. There is little hope of making the world better if we do not seek the cause of social evils at their foundation.

18. No evil can be *permanently* lessened without first finding its cause. There is probably no *one* cause of anything, but a chain of causes.

19. Drunkenness is not only one of the main causes of crime, but one of the greatest enemies of humanity, because it brings suffering upon so many innocent people.

20. We cannot be tempted to do wrong unless there is something in us to be tempted; that something is a part of ourselves as distinguished from our environment; therefore,

21. The comprehensive study of man requires investigation of both individual and his surroundings, for the environment may be abnormal rather than the man.

22. Cranks or mattoids who attempt the lives of prominent persons are very important solely on account of the enormous injury they can do to society. They therefore should be studied most thoroughly.

23. Just as the physician studies his patient in order to treat him properly, so one should study the criminal.

24. The exhaustive investigation of a single criminal illustrates just how and by what steps both environment and inward nature lead to criminal acts.

25. Criminals, paupers and other defectives are social bacilli which require as thorough scientific investigation as the bacilli of physical disease.

26. No one should be held responsible for the first fifteen years of life, nor is any one accountable for the tendencies inherited from ancestors. As the die is usually cast before adult life arrives, responsibility is most difficult to determine, and is often a minimum quantity. Therefore,

27. In judging human beings we should emphasize their excellencies rather than defects. As has been said, to know all is to forgive all; yet

28. Every person dangerous to property or life, whether insane, criminal or defective, should be confined, but not necessarily punished.

29. The determinate sentence permits prisoners to be released who are morally certain to return to crime. The indeterminate sentence affords the prisoner an opportunity to reform without exposing society to unnecessary danger; but

30. Society has no right to permit prisoners to be released who will probably return to crime; for

31. Where it is a question between justice to the individual or justice to the community, the community should have the benefit of the doubt.

32. The prison should be a reformatory and the reformatory a school; the object of both should be to teach good mental, moral and physical habits; both should be distinctly *educational.* There should be a minimum temptation to do wrong and a maximum encouragement to do right.

33. Institutions for reforming human beings should have the conditions as similar as possible to surroundings outside, so that when inmates are released they may adapt themselves more easily to society and not become misfits.

34. Every one has the right to a proper bringing up; and

35. The time has come when we should study a child with as much exactness as we investigate the chemical elements in a stone or measure the mountains on the moon.

36. One purpose of criminal anthropology is, through knowledge gained by scientific study, to protect the weak, especially the young *in advance,* before they have become tainted and fallen; not locking the barn door after the horse is stolen.

37. The treatment of young criminals should be the prototype for treatment of adults, and procedures against them should have as little publicity as possible.

38. Publication in newspapers of criminal details is an evil to society on account of the power of imitation. In addition it makes the criminal proud of his record, develops the morbid curiosity of the people, and it is especially the weak who are affected.

39. Place confidence in the so-called bad boy, awaken his ambition and teach him to do right for right's sake.

40. Put the criminal upon his honor. A criminal once said, "If they will not believe me when I tell the truth I might as well tell lies."

41. Nothing will hinder development of the young more than the prospect of having plenty of money and no necessity to work. Idleness often leads to crime.

42. It is more important to know what is good than what is true; for

43. Increase in intellectual development is not necessarily connected with increase of morality, and education which trains the mind at the expense of the will is a questionable education.

44. The longer we live the more we appreciate the average honest man, as compared with the dishonest talented man.

45. To any observer of life the impracticability of pessimism and the advantages of optimism are evident. It has also been estimated that

46. Most of our thoughts, feelings and acts are indifferent; but of those remaining, three-fourths are pleasurable and one-fourth painful, indicating more pleasure than pain in the world.

47. Act as thou wouldst act if all the consequences of thy act could be realized at the moment thou actest.

SOME CAUSES OF FAILURE OF VACCINE THERAPY.—Dr. W. M. Crofton (*The Lancet*) concludes that most cases of failure in this treatment are due to want of proper application of the method to the patient. There are several potential causes of failure to be taken into consideration: (1) Failure of patient to react; (2) failure to diagnose the infecting microbes; (3) incomplete immunization; and (4) failure to give the doses at proper intervals.

1. It is of course essential, in order that vaccine therapy should be successful, that the patient's tissues should be capable of responding to a further stimulus. It is remarkable, and would appear *a priori* impossible, that in such acute generalized infections as typhoid fever, where the micro-organisms are circulating in the blood, the patient's tissues would be capable of reacting, and yet such is the case. The same is true of other acute diseases, such as pneumonia and puerperal septicœmia. The writer has suggested that, for instance, in typhoid fever, where the microbes are in the circulation, many of the tissues are protected to a large extent from the microbes and their poisons by the endothelial cells of the capillaries, the efficiency of which as phagocytes is well known; and so, when the vaccine is put into the subcutaneous tissue, one gets behind them into tissues capable of further response. This resistance of the endothelial cells is destroyed in overwhelming infections with the production of hæmorrhages. The tissues are overwhelmed with poison, no antibody-producing tissue is left, and the patient dies.

One finds that old people react badly and so the initial dose must generally be smaller, and one cannot generally increase the dose to the extent that is generally possible in younger people. Diabetics are extremely sensitive, and the doses given must be small. Acidosis, chronic nephritis and cachexia are conditions in which a poor response may be expected.

2. Taking for granted that the patient is capable of response, an accurate diagnosis of the infecting micro-organism, or micro-organisms, is essential. Failure in this respect is one of the most potent causes of want of success in vaccine therapy. And here comes in the question of stock vaccines. Certain stock vacicnes, such as staphylococcus vaccine and gonococcus vaccine, can be used with fair prospect of success provided a suitable series of doses can be obtained. None of the big firms supplying vaccines supply such suitable series. Again, although boils and carbuncles are practically always staphylococcal in origin, the author saw a case recently covered with varying sized pustules, and from the pustules and his blood he isolated a different microbe. Again, acute urethritis is caused by many other microbes besides the gonococcus, so that giving gonococcus vaccine in such a case without bacteriological examination is quite unjustifiable. It is always better to use autogenous vaccines. They also give one a certainty of using vaccines of appropriate toxicity.

Dr. Crofton is at present treating a case of advanced rheumatism. The patient was given a large number of injections of stock streptococcus vaccine without any reactions and without any improvement. He made cultures from his gums, which were inflamed, and found this was due to a small Gram-negative bacillus. He is steadily improving.

Even with ordinary bacteriological examination one can go wrong. In a case of pyorrhœa alveolaris from whose gums the writer had isolated what he found, is far the most common combination in this condition, viz.: micrococcus catarrhalis and streptococci, and although he had pushed the mixed vaccine to a high dose, there was no improvement. The lesions in this case were due to the bacillus fusiformis, which is exceedingly difficult to grow, and the patient is now improving steadily with a mixed vaccine containing these microbes.

It is the usual practice, if, for instance, from sputum a mixture of micro-organisms grow, to subculture these separately, and use one or other of these either after testing it against the patient's serum, or choosing the most probable microbe without testing it; or if the opsonic index or other test indicates that two or more are pathogenic, to mix them in suitable proportions, or give them consecutively. Crofton's practice is as follows: Taking sputum again as an example, if from the central part of a carefully taken and carefully washed piece of sputum, a mixture of microbe grow, he believes it reasonable to suppose that more than one microbe is taking part in the process; one, of course, is probably the initiator of the process, but if there is present another micro-organism, which has been leading a saprophytic existence or causing a lesion that is not producing symptoms, then it is unreasonable to suppose that it will not become pathogenic or more pathogenic when the resistance of the tissues is lowered. Anyhow, if a microbe which grows is not pathogenic it will do no harm in the vaccine.

It is far better practice than to make the vaccine off the original plate, for the toxicity of the microbes is not lowered by subculture, and one is far more likely to get them in suitable proportion in the vaccine.

Pyorrhœa alveolaris is commonly a mixed infection, the most common combination being microbes belonging to the micrococcus catarrhalis group and streptococci. Acne is always caused by acne bacilli and staphylococci. Nearly all the inflammations of the gastro-intestinal tract are mixed infections—e. g., as in typhoid fever. Inflammations of the respiratory tract very frequently are, for example, tuberculosis of the lungs. There is another combination that is very important, and that is infection in one set of tissues lowering the resistance of another set, and so predisposing to microbial action in them. A good instance of this is staphylococcal inflammation of the skin, accompanied by chronic inflammation of the gastro-intestinal tract. If inoculation of staphylococci alone is given frequently only temporary or a very little improvement is produced. The causes of the intestinal inflammation must be diagnosed and a mixed vaccine used.

3. *Dosage.*—Wright and Douglas worked out their system of dosage by the opsonic index, their object being to find out the dose which kept the opsonic index at its highest point. They found out that a comparatively small dose in any given case would produce this result, and a repetition of this dose or a small variation of it was given at suitable intervals—that is, when the opsonic index began to fall.

Now the amount of specific antibodies produced in the blood, when the opsonic index is brought to its highest point, is small, and frequently too small to produce the cure of the patient. Increasing the dose of vaccine increases the amount of specific antibodies, but the opsonic index does not give a measure of them, unless a dilution method is used, and yet the whole system of dosage has been worked out on this index and has led to hard-and-fast rules of dosage, when, as a matter of fact, the dosage in any given case must be worked out on its merits. There is no hard-and-fast upper limit of dosage for any given patient infected with any given micro-organism. The following is an example: A patient who had an abscess behind her knee and had had sinuses discharging for four years had been given a few doses of staphylococcus vaccine with no results. Steadily increasing doses to 6,000 million quite cured her. The writer believes that 2,000 million staphylococcal vaccine or less is considered by many the upper limit of dosage for this microbe. In the case of chronic staphylococcal septicæmia mentioned above a dose of 30,000 million was attained before apparent cure was attained. In a case of streptococcal pyorrhœa a dose of 8,000 million had to be attained before the patient was apparently cured. He has a very advanced case of pyorrhœa alveolaris at present, due to M. catarrhalis and streptococci, who is not yet well, but nearly so after 8,000 million mixed vaccine. The dose is steadily being increased. Of course such large doses have not to be attained in every case.

For instance, in a recent staphylococcal infection, one may apparently cure the patient with two doses of 100 million and 200 million. One would give 400 million and 800 million after to prevent relapse. As a rule, the more chronic the case the larger the dose that will have to be attained. The author begins with a small dose, sometimes needlessly small, and steadily increases it with due regard to reactions until the patient is apparently well, after which one or two larger doses are given to leave a margin of safety. In this way one adapts the treatment to the patient and not the patient to the treatment.

The writer emphasizes the fact that you cannot tell in any given case the size of the dose that must be attained before success is achieved.

4. The fourth, and last, cause of failure he mentions is the giving of the vaccine at fixed intervals without any regard to any reaction the patient may have had. It is quite common to find that vaccine therapy has been abandoned because the patient has been made worse, and to find that succeeding doses have been given before the effect of the preceding one has passed off. It is much better to give the vaccine at too long an interval rather than at too short a one. If after an injection there is neither local nor general reaction, one may often give the next dose after 48 hours. If there is a slight local or general reaction one leaves a longer interval. The author generally leaves three clear days after all signs of reaction have passed before giving the next dose, and if the reaction has been a severe one the previous dose is repeated after this interval. As the doses get larger the intervals get longer. One often leaves 14 or more days between large doses of staphylococcal vaccine.

Crofton mentions a practice he has found very successful in controlling reactions—it is

the exhibition of iodine. Szendeffy's mixture of iodine, menthol, and radium, is used, which is very easily prepared. The patient is told to come next day after an injection, and if there is severe malaise or markedly increased focal symptoms 1 c.c. of this mixture is given. Iodine has been proved to be an antitoxin of the best kind, since it destroys the toxic, but not the combining, power of the toxin molecule, and so does not interfere with its antigenic properties.

ROENTGENOTHERAPY IN UTERINE HEMORRHAGE.—G. E. Pfahler, Philadelphia, (*Journal A. M. A.*), remarks that treatment of uterine hemorrhage by the Roentgen ray is one of the most brilliant achievements of roentgenology. The sexual glands are the most sensitive of all the glands in the body to the Roentgen rays, and this explains the fact that the ovaries are especially affected toward the menopause when the resistance of the gland is reduced. The good results, as given by him, are the cessation of the menses, decrease in size of the myomas and decrease or cessation of the hemorrhages connected with them, cessation of preclimacteric pains or hemorrhages, sterilization when indicated, obliteration of postclimacteric hemorrhage, control of menstrual disturbances at any age; it is especially in the myomas of elderly women and the accompanying hemorrhages that they are useful. The results will be the more generally satisfactory in older patients. Under 40, roentgenotherapy is not the method of choice. Good results may be obtained, but more treatment will be required. The intromural or interstitial tumor gives the best results. The contra-indications are: "1. All cases of myomas in which the tumor is pedunculated or which can be excised without destroying the reproductive powers of the patient. 2. Fibroids that have undergone malignant degeneration, or that have become gangrenous should not be treated. 3. Fibroids associated with disease of the adnexa. 4. Fibromas which are producing such marked symptoms that the patient is endangered more by waiting two or three months for results of roentgenotherapy, than by the result of an operation." The decrease of the hemorrhage is more prompt the older the patient or the nearer she is to the menopause. The first series of the radiations may cause an increase in the hemorrhage, especially in patients who are very anemic, and in such special effort should be made to keep the patient in bed and if necessary be prepared to use a tampon. Later the vitality of the cells is depressed and destroyed. With the cessation of hemorrhage the general health improves. The decrease in size of the tumor is slower but sometimes it appears before the hemorrhage ceases. Some good reports have been recorded from treatment of malignant disease of the uterus, but permanent results are hardly to be expected, and at present we should recommend roentgenotherapy only for inoperable and recurrent cases. Pfahler recommends the Coolidge tube as a great advance. It enables one to adjust the degree of vacuum at will and maintain it uniformly with a large quantity of current. The tube should be one that can keep a constant high vacuum of from seven to eight Benoist. The most practical distance for the target of the tube from the skin of the patient is about 8 inches, and the ray should be confined to the area treated as much as possible. Filters should be used to cut off rays that are mostly absorbed by the skin. The time required to give any particular series of treatment would depend on the character of the equipment and technic; generally he uses from one to three days to give any series of treatment, and the period between series should be preferably three weeks, but not less than two. The disadvantages of the treatment are the long time it takes, the danger to overlying tissues if the rays are not properly applied, and it has been claimed that it is more expensive than operation, but considering the lack of the expense of board and hospital care, Pfahler considers it not more expensive. The advantages are: Absence of pain, lack of shock of operation, preservation of the internal secretion to a certain extent, as he believes, no interruption of the usual habit or confinement in a hospital, safety in the hands of a skilled operator, the gradual production of the menopause and the ability to grade the treatment to the needs of the patient.

PARTIAL COLECTOMY FOR INTESTINAL STASIS.—Dr. John H. Jopson (*Annals of Surgery*) reports the case of a woman, aged thirty-four, who had been ill since November, 1911. Her symptoms were those of intestinal stasis, obstinate constipation, abdominal pain aggravated by eating; eructations, great loss

of weight and quite marked neurasthenic symptoms. When first seen she was of a tall, thin, gastroptotic type of female, but this was largely due to the fact that she had lost 30 or 40 pounds within a few months. She had a marked secondary anæmia. In May, 1912, Dr. Jopson had removed her appendix, which showed chronic interstitial changes, and separated numerous broad, thin adhesions between the first portion of the duodenum and the transverse colon which were causing a moderate obstruction of the first-mentioned portion of the bowel. The stomach showed no disease. She was not in the least improved by this operation, but continued with the attacks of gastric pain, gas, inability to take anything in the line of solid diet, and with some hyperacidity. The constipation became much more obstinate. Inflation of the stomach showed a very moderate ptosis.

The patient was placed on a modified rest cure in the hospital, but vomiting, abdominal pain and distress, and eructations continued

In August, 1913, the abdomen was reopened. Careful examination showed that adhesions which were divided fifteen months previously had not reformed, the large bowel being remarkably free, except at the hepatic flexure of the transverse colon. At this point the bowel was acutely kinked; the ascending colon and transverse colon were bound together by adhesions of the same avascular nature as those discerned at the first operation. The ascending colon was much distended. The distal portion of the transverse colon and the descending colon were moderately collapsed, and there were a very few adhesions at the splenic flexure, which were divided.

The terminal portion of the ileum was divided and the cæcum and ascending colon and hepatic flexure and the first portion of the transverse colon were excised. A lateral anastomosis was performed between the terminal portion of the ileum and the transverse colon beyond the point of its division.

The patient made a good operative recovery, and when seen four months after operation she was greatly improved. She had gained about 16 pounds in weight. Her constipation was entirely relieved. The stomach symptoms, indigestion, eructations, etc., were very much less and improvement was still progressing. She could eat a normal meal, at least once a day; and, while she still complained of some lumbar pain, especially marked on the right side, which she had had for several years and which was associated with a very movable kidney on this side, she was, comparatively speaking, a well woman in contrast to her condition before the first and second operations. Since then she has not been ill enough to consult her physician, although he recently heard from her to the effect that she was again having some gastric indigestion, mucus in the stools, and some of her old symptoms, so that the final result of the operation cannot yet be stated.

UTERINE HEMORRHAGE.—Dr. Richard C. Norris (*The Therapeutic Gazette*) gives the following epitome of the principles of treating uterine hemorrhage: It is necessary to emphasize the fact that diagnosis of the cause is absolutely necessary. The *routine* use of drugs is useless; their *discriminating* use is limited. Ergot, stypticin, and hydrastis are the only drugs I ever use, and they are never employed until the uterus is known to be empty and free from gross lesions of the endometrium. pituitrin can only be used hypodermically. I have no experience with its gynecological efficiency. Thyroid extract has been efficient in some cases, supposed to be due to deranged ovarian function. Calcium chloride in fifteen-grain doses is said to be efficient after testing the coagulability of the blood. Laxatives are always useful. Salines or phenolphthalein are preferable to aloin combinations.

Local Applications.—The copious hot vaginal douche, and ichthyol and glycerin tampons, to reduce congestion, are always useful in non-operative cases, such as subinvolution and chronic pelvic congestion. The same is true of the constant electric current. If too freely used the latter may lead to superinvolution and sterility.

To control temporarily a serious uterine hemorrhage a firm uterine pack wet with iodine or adrenalin I have found useful. Having discovered by vaginal examination a gross pelvic lesion, drug treatment should cease.

If the bleeding is due to the injuries of labor or the results of a miscarriage, an operation is advised. Hypertrophic endometritis is curetted; laceration or hypertrophy of the cervix is repaired or amputated; cystocele and relaxed pelvic floor are repaired by a modified Goffe operation and a modified Emmett operation on the pelvic floor; if the uterus is displaced the round ligaments are shortened either through the inguinal canals or by the Mayo method through an abdominal incision. When the uterine bleeding is due to hopelessly diseased pelvic organs from grave infection a hysterectomy is indicated.

When a myoma is discovered the new treatment with the more powerful X-ray than hitherto used, as exploited at present throughout Germany, has begun to find its way in America. These powerful rays, through their influence on the chemistry of the body cell, probably that of the ovary, are said to control hemorrhage and reduce the tumor. The future must decide the real value of this treatment. Thus far the results as I have studied them have not diverted me from surgery for fibroids associated with inflammatory symptoms, large enough to produce pressure symptoms, and bleeding enough to threaten grave anemia.

Cases presenting no gross lesions, but bleeding freely at or shortly after puberty, or causing the pre- and post-climacteric metrorrhagias, not benefited by the curette, are thought to be due to disturbed ovarian function. Attempts to correct this function have been made by X-rays, or by using antagonistic glands of internal secretion. Thyroid, ovarian, mammary, adrenalin, and pituitary extracts have all been used in such cases, with results still uncertain. In elderly women these cases have been successfully treated by the application of live steam to the endometrium. For this last class of cases I have, where otherwise it was justified, resorted to hysterectomy.

The dangers of the indiscriminate use of the curette in obstetric practice have been referred to. The same statement is in part true in gynecology, its only therapeutic field being that of degenerative changes in the endometrium, including polyps.

For temporary relief in cancer, the thermocautery, followed later with applications of acetone and radium, will check hemorrhage and prolong life. Wertheim's operation is indicated, and has justified its use for carcinoma diagnosed early by microscopic study.

CASTRATION IN WOMEN.—Alfred Gordon, Philadelphia (*Journal A. M. A.*), notices the anatomic changes observed to follow removal of ovaries and remarks especially on the mental and nervous disturbances. He gives the results of his own observations in 112 cases and from an analysis of all the cases grouped in his study draws the following conclusions: "Removal of the reproductive organs in women causes disturbances in the domain of the nervous system. These disturbances are of a purely functional nature. The disturbances are somatic and psychic. The psychic manifestations, while individually they belong to any of the varieties of psychoneuroses, nevertheless in their ensemble do not constitute any of the well-established classical forms of psychasthenia. True insanities are not observed. The generally observed symptoms are: restlessness with a tendency to move from place to place; difficulty of self-control; dissatisfaction with all and everything; difficulty of finding contentment in one's own efforts; want of interest in all absorbing subjects and objects; indifference, indolence and pessimism. Sometimes there are outbreaks of anger with a tendency to attack. Among other symptoms may be mentioned: insomnia, gastro-intestinal disturbances of a functional nature, headache, vague pains or paresthesias, also occasionally glycosuria; tendency to obesity is also observed in some patients. While the psychic manifestations are sometimes of a very disturbing nature, nevertheless they do not present the characteristics of genuine psychoses. For example, indifference and want of interest in surroundings lack the depth of those of melancholia or of dementia. Restlessness, which is so frequently observed here, lacks the characteristic features of exaltation in the motor sphere observed in cases of mania. As mentioned above, while individual symptoms of my cases resembled those of psychoses, the entire picture of each case lacked the depth and definiteness of any of the forms of insanity. Some of my patients had to be removed from their surroundings and isolated, not because they were insane in the proper sense of the term, but because of inconveniences caused by them to others. Besides, the subsequent histories of the last category of patients as well as of any other patient of my entire series proved at no time the existence or eventual development of true psychoses. On the other hand, it is striking that the morbid phenomena persist with a remarkable obstinacy; at times they become more accentuated, at others some improvement is noticeable, but then it is only temporary. Some of my patients have been under observation during a period of ten years and the condition still persists unaltered. Individuals who presented various manifestations of psychoneuroses before they fell into the hands of surgeons, had their psychic phenomena decidedly aggravated after the uteri and ovaries or only ovaries were removed. As in the removed organs healthy portions of tissue were invariably found, it is to be supposed that the removal of the latter is in some relation to the morbid phenomena observed after the operations. The logical

conclusion seems to be that one must be very cautious in advising operative procedures on the generative organs and the tendency should be to preserve as much as possible of any amount of normal tissue found in the uterus or ovaries. No operation should be advised on healthy organs if a woman complains of vague nervous disturbances."

PARAVERTEBRAL ANESTHESIA IN GALL-STONE SURGERY.—Dr. F. Jurasz (*American Journal of the Medical Sciences*) ascribes the success of paravertebral anesthesia largely to the fact that large quantities of non-toxic novocain with adrenalin can be employed. The fluid is injected in the neighborhood of the spinal ganglia and the intervertebral foramina. It had been considered necessary to inject on both sides in order to obtain sufficient anesthesia for abdominal operations. The method has been employed for operations in the neck, thorax, and abdomen. Francke observed severe collapse in several cases and thought this was due to rapid and wide extension of the anesthetic fluid over the surface of the dura mater. Kappis also observed collapse, but in only mild grade in two out of 30 cases. Jurasz does not believe it is due to an epidural extension of the anesthetic fluid, but to a special intolerance of some patients, especially, to strongly concentrated solution of novocain. He believes that too much demand is made by some surgeons on the tolerance of the body to this substance which is a poison. He recommends its employment in gall-bladder surgery, especially for cases in which general anesthesia is contra-indicated. He employed it in two cases without further anesthesia of the skin or peritoneum and obtained complete anesthesia of the abdominal walls, the peritoneum and the right-sided abdominal organs. Operative shock, also, seemed to have been excluded completely. He employed the following technique: With the patient in the left lateral position and the knees drawn up, a small quantity of a 0.5 per cent. novocain in solution is injected subcutaneously in a line about 3 cm. from the spinous processes. Then in this line at the level of the sixth spinous process, a fine, long needle is introduced and made to seek the lower border of the corresponding transverse process. Close under it the needle is passed about 0.5 to 1 cm. deeper in a slightly median direction and is moved about carefully until the patient experiences a pain radiating forward. Then 5 c.c. of the solution are deposited without changing the position of the needle. The pain ceases completely in a minute. The needle is then allowed to remain in position and a second needle is employed to make a similar injection at the level of the next spinous process. After this injection the first needle is removed and with it a third spinal nerve is injected in the same way, the second needle remaining in position. In this way the necessary number of spinal nerves are anesthetized. In the lower breast region the spinous processes do not guide the point of injection because the lower transverse processes are more at a right angle with the vertebræ. Here, the best guide is the distance between the upper punctures. Patience is necessary on the part of the surgeon and patient because it is not always easy to find the nerve and the patient must put up with considerable pain. Injection on both sides is not necessary and for that reason this method is suitable for operations on the liver and gall-bladder. The injection of 40 c.c., which Jurasz employed in both of his cases, will produce no symptoms of shock.

IMPAIRED RESONANCE AT THE APICES IN CHILDREN.—Dr. Frederick Mielke (*American Journal of the Medical Sciences*) contributes interesting investigations bearing on the diagnosis of impaired apical resonance in children, and offers 18 cases to illustrate his points. In many poorly developed children with pallor and loss of appetite, an impairment at one apex would generally indicate apical tuberculosis. If, besides this, there is a poor family history, a positive von Pirquet or possibly elevated temperature, the diagnosis would seem to be confirmed. On closer study these children are found to exemplify a type characterized by muscular weakness and poor development of the spine and back. In standing they exhibit a marked lordosis with often a slight kyphosis of the lumbar vertebra. The conformity of the vertebra is still infantile and in this position a slight scoliosis exists. Asked to stand erect the child leans back still farther, increasing the scoliosis. Even a small bending of the vertebral column in a small, elongated thorax will cause a shortening of the percussion note at the apex. If the child's position be corrected by having him lean forward

slightly, the arms hanging loosely downward and the abdomen drawn in, the muscles of the thorax will be relaxed, the spine straightened, and on percussion of the apex the impairment present in the erect position will have disappeared. This would indicate that an impairment is only significant when it persists in the corrected posture. Roentgen-ray plates of these cases show the first three ribs lying closer together than normal and the first rib sunk inward, thus narrowing the upper thorax aperture. This fact, coupled with the crooked posture due to muscular weakness, explains the production of the pseudo impairment. The 18 cases cited clearly demonstrate Mielke's contention, as most of them seem tuberculous from their general symptoms and the impairment present in the uncorrected posture, but in all of them the impairment disappeared in the correct posture, and Roentgen-ray examination showed no pathological change in the lungs, even in cases showing a positive von Pirquet, an elevated temperature, or a tuberculous family history. Mielke suggests that this method applied to apparently tuberculous children might lower the statistical incidence of tuberculosis in childhood.

"Chronic Metritis."—An attempt to bring some order into our conception of this very loosely applied, and often misapplied term, has been made by Shaw (*American Journal of the Medical Sciences*), who has made careful histological studies of a number of uteri removed under this clinical diagnosis. He believes that there are at least two, if not more, totally distinct classes of cases, so far as their etiology is concerned, that nevertheless produce a similar symptom-complex, and are therefore commonly grouped under the general designation of "chronic metritis." The attributes possessed in common by these classes are that the uterus is regularly enlarged, thick-walled, and firm, producing excessive hemorrhage, leucorrhea, and dragging pain. The two groups that he has been able to differentiate are: (1) the result of subinvolution of a parous uterus, and (2) due to hypertrophy of a non-parous uterus. In his study Shaw has examined 25 cases of the former and 4 of the latter condition. He has found in each group the uterine wall grossly thickened, this thickening being due in neither case, however, to any relative increase in the fibrous tissue, as is commonly supposed, but simply to a quantitative increase in both the muscular and fibrous elements, these maintaining about their normal relative proportions. He therefore considers the term "fibrosis uteri," which some authors would apply to this condition, distinctly bad. The most marked difference between the two groups is in the elastic tissue, in the hypertrophic group this maintaining the arrangement characteristic for normal, nulliparous uteri, i. e., it is confined almost exclusively to the internal elastic lamina of the blood-vessels, with only very delicate fibrils in the media and adventitia, and running out between the muscle fasciculi of the mesometrium, whereas in the subinvolution group thick strands of elastic tissue can always be found surrounding the outside of the bloodvessels and extending out through the uterine musculature. In regard to the etiology, Shaw thinks the thickening of the uterine walls is the result in the subinvolution cases of a failure of the parous uterus to return to its normal condition because of advanced age of the patient, sepsis, general ill health, etc. To account for the hypertrophic group, he advances the theory that the endometrium is the prime factor in causing the uterine enlargement. In all the cases examined the endometrium was markedly thickened; the cause of this, Shaw was not able to determine, but he believes that once this has taken place, the thickened endometrium acts practically as a foreign body in the uterus, and gives rise to excessive contractions, especially at the menstrual periods, resulting in a "work-hypertrophy" of the entire musculature. He believes that the hemorrhage in the subinvolution group is due to the excessive amount of elastic tissue present, this not having the same contractile power upon the bloodvessels as muscle, whereas in the hypertrophic group it comes chiefly from the thickened endometrium, as is evidenced by the fact that many of these cases are greatly benefited by curettage, which is practically without result in cases of the subinvolution type.

The Surgical Aspect of Intestinal Stasis.—Dr. A. Primrose (*The Proctologist*) avers that no attempt is made in his paper to discuss the various vexed problems which are involved in the subject of intestinal stasis. The author gives his own

experience in the treatment of this condition by surgical means. The frequency of the occurrence of Lane's kink of the ileum, of Jackson's membrane and of adhesions about the appendix is noted as the result of careful observation in 155 consecutive cases of operation for removal of the appendix. Lane's kink of the ileum existed in 14 per cent.; Jackson's membrane in 22 per cent.; adhesions about the appendix existed in 63 per cent.

The author urged that the operation of complete excision of the colon and of similar procedures should not be undertaken lightly, as the risk is very considerable and increases when the operation is performed by those who have had limited experience in such work. A number of cases were quoted in detail illustrating the advantage of surgical procedure in the relief of various forms of intestinal stasis. At times a comparatively minor operation is all that is necessary, such as the removal of an adherent appendix or the release of a kink in the ileum, or perhaps a combination of these two procedures. At other times it is necessary to remove the colon before relief of symptoms is obtained.

As the result of experience one finds definite proof of the fact that trouble in the duodenum or stomach with symptoms of ulcer may be entirely due to pathological conditions existing in the ileocecal region. The author quoted several cases where these symptoms of gastric or duodenal trouble had completely cleared up after removal of the appendix and the release of kinks in the ileum. The experience of many surgeons is rapidly increasing in this field of operative work and many of Lane's contentions have been proved accurate. Where the author differs from Lane, however, is in the assumption that stasis is the only cause of such conditions as tuberculosis, cancer, etc.

It is entirely probable that a diminished resistance due to the effects of intestinal stasis may be an important factor in the development of these diseases, and, per contra, the relief of stasis may be of service in the cure of such conditions as tuberculous infection; but experience unquestionably shows that these major affections may be present and develop in the absence of stasis.

CONCLUSIONS:

1st. That these sinuses are due to an imperfection in the development of the embryo and are therefore congenital.

2nd. That the presence of hair is due to the shedding of hair in the sinus and does not originate from the outside.

3rd. That inflammation of the sinus takes place in adult life.

4th. That neither want of cleanliness, social condition nor sex play any role in its development.

5th. That the treatment consists in the obliteration of the sinus.

THE WET-NURSE IN HOSPITAL PRACTICE.—F. S. Churchill, Chicago (*Journal A. M. A.*), has remarked on the high death-rate in the best infant hospitals, due to the chronic malnutrition of the cases brought, and describes the methods used at the Children's Memorial Hospital, where two or three wet-nurses have been employed to furnish breast-feeding for infants. Each nurse brings her own baby, and both are examined before engagement, that of the mother including the Wassermann test. The nurse is paid $30 per month, with board and room, and in addition to her duties as foster mother, does general work about the ward. The mother nurses her own baby every four hours, usually on one breast. The other is pumped at the alternate four hours, the mammae being thus stimulated to activity every two hours. The milk is fed by bottle to the ward babes, none of them being put to the breast for fear of infecting the woman, for example, with latent syphilis. The method has the further advantage of allowing definite amounts of breast milk to a given baby. Excepting the prematures, few of the babies receive exclusively breast milk, but partly cow's milk and partly human milk. The feeding of cow's milk is gradually increased as the child improves, preparatory to sending it home on a simple milk formula. As a rule, the milk from the nurses is mixed and fed thus to the babies, unless otherwise indicated in babies with weak digestion. The amount furnished by each nurse of course varies, but it increases quite rapidly until the maximum amount is reached—ranging from 15 to 60 ounces per day. A good wet-nurse should furnish at least a pint of milk daily. The results are stated in detail, according as the child was fed on breast milk or in combination in different proportions. The total number of cases studied is 715, of which 165 fall into the breast-milk feeding group, and 550 into the cow's milk group, and that includes the types of cases usually seen in in-

fant hospitals, ranging from mild cases of disturbed feeding to severe ileocolitis and severe degrees of "intoxication." The mortality in both groups is practically the same, 36.3 per cent. in the breast-fed and 36.9 per cent. in the cow's milk-fed babies. The larger proportion of those receiving breast milk survive. The conclusions reached are given substantially as follows: Comparative study of two groups of infants, of unequal age and weight, the older and heavier group fed exclusively on cow's milk, the lighter and younger on part human and part cow's milk shows about the same mortality rate in both. A study of two groups of the same age and weight, fed as above, shows a mortality 8 per cent. less in the group fed partly on breast milk. Infants seriously, but not hopelessly, ill, whose diet consisted of at least half breast milk over a critical period, showed a mortality of 3 per cent., while infants somewhat less seriously sick, whose diet consisted of less than half breast milk for a similar period showed a mortality of 50 per cent. Whenever possible, therefore, the diet of such seriously ill babies should consist of at least half breast milk through the critical period of their disease. The use of a limited supply of breast milk in a large infant hospital over a period of three weeks has not reduced the infant mortality of that hospital during that period. The mortality, however, has not risen, in spite of the fact that during the same period the infant mortality in the city where the hospital is located, and from which the hospital draws its patients, has steadily risen. Breast milk is not a panacea for all the ills of infancy. Desperate cases show a high mortality even when fed exclusively with breast milk.

THE PITUITARY GLAND IN ITS RELATION TO EPILEPSY.—Dr. George C. Johnstone (*Maine Medical Journal*) points out the fact that most previous investigations on the pituitary had been concerned with a microscopic study of the gland structure, while a study of the pituitary region had been overlooked. He says that nature has considered the pituitary of such importance that she has located it in about the most inaccessible and strongly fortified position in the body. Lying in a deep depression on the roof of the sphenoidal sinuses, it is covered by the dura and well protected from pressure by the anterior and posterior clinoid processes.

An X-ray examination of the pituitary region in over 100 cases of epilepsy has brought out the following interesting facts. In chronic or congenital epileptics very little of interest was found. But in the class of cases which showed no trouble in childhood but somewhere between the ages of 15 and 35 years began to develop petit-mal, gradually increasing in severity and frequency, he found rather constant changes in the typography of the sella turcica. These changes consisted for the most part in an overgrowth of the anterior and posterior clinoidal processes, which, in addition to an increase in area and length, are slowly folded over and down upon the pituitary gland, enclosing it within a bony casket. The fossa also in the course of time, becomes smaller and we may also expect the gland itself to atrophy. At first this was looked upon as an anatomical deviation but the frequency with which the condition was found was very striking and soon Dr. Johnstone and his associates got so that from the clinical history of the patient they could prophesy almost the exact degree of roofing in a given case.

As Cushing and others have shown that hypopituitarism was accompanied by epilepsy or epileptiform seizures, Dr. Johnstone believes that the body overgrowth of the clinoid processes may cause pressure on the gland and a decrease in blood supply and its fundamental activity.

For treatment he suggested that the gland extract may be combined with the bromide treatment, and after a time the bromide cut down and dropped. He also expresses the hope that safe operative technique may be developed to reach this region.

A NEW METHOD OF FORMALDEHYDE DISINFECTION.—*The Quarterly Bulletin* of the State Board of Health of New Hampshire gives out the following information:

Owing to the state of war in Europe, the price of potassium permanganate has been raised to a degree that makes its use almost prohibitive for disinfecting purposes under the method which has been in operation in this state and elsewhere for several years, and it is almost impossible to obtain it at any price, since it is not produced in this country.

The Department of Health of Pennsylvania, therefore, requested its chemists to conduct experiments with the object of securing a substitute, if possible.

The result was, as we are informed, that it was found that sodium dichromate is a satisfactory substitute, and that it produces

a more rapid liberation of the gas than was possible under the old process.

The Department says: "The reaction is produced by a combination of the dichromate with sulphuric acid. The most suitable proportion appears to be the following:

"Sodium dichromate, 10 ounces avoirdupois;

"Saturated solution of formaldehyde gas, 1 pint;

"Sulphuric acid, commercial, 1½ fluid ounces.

"The sulphuric acid can be added to the solution of formaldehyde and the mixture kept on hand for use. It should, however, be more carefully handled, as the presence of acid would render it destructive to furniture, fabric, etc.

"This solution can be added to the crystals of sodium dichromate spread out in a thin layer over the bottom of the vessel having ten times the capacity of a volume of the ingredients used.

"This reaction is more nearly instantaneous than with potassium permanganate. This necessitates a very prompt withdrawal from the room in which chemical reaction has been started."

As the residue is somewhat corrosive, on account of the sulphuric acid employed, it should be removed as soon as possible, and the container, if of tin or other metal, should be scrubbed as soon as possible.

As to the cost, we are informed by a druggist that sodium dichromate may be had at 15 cents per pound, and sulphuric acid for about 6 cents per pound. It will, therefore, be seen that this new method is not more expensive than the old, and it is equally efficient.

MASSACRE OF THE TONSIL.—Drs. Coolidge and Garland (*West Virginia Medical Journal*), lay down the following excellent rules, which they believe should be followed in practically all cases:

Tonsils should be removed if serious symptoms can be logically attributed to them. The more serious the symptoms and the more direct the connection, the more imperative is the operation.

They should be removed for recurring peritonsillar abscess.

They should be removed for recurring and persistent cervical adenitis that cannot be accounted for by a focus in the teeth, vestibule, scalp, nose, naso-pharynx or ears.

They should be removed for recurring sub-acute tonsillitis. This does not include those acute infections of the mucous membrane of the upper respiratory tract so often accompanied by sore throat, which do not start in and only incidentally involve the tonsillar ring.

They should be removed if it is believed, or even seriously suspected, that they are the entering point of constitutional infection. While few dispute this, its practical application in individual cases must be often influenced by different opinions. The tonsils are only one of several avenues through which infection may enter. As it is often the easiest one to close, an experimental operation in serious cases may be justifiable. It is perhaps better to sacrifice many innocent tonsils rather than to allow one guilty one to escape, but it is also true that every unnecessary operation does a little harm to medical science. It is unfortunate that we can never be sure by its appearance that a tonsil is innocent and not very often that it is guilty.

Very large tonsils should be removed, as experience proves that persons are better off without them. But we have found that in children the number of cases in which the tonsils are markedly larger than normal and need removal on that account is small. In our series there were thirteen such cases, with an average weight of 51 grains.

Tonsils which are wholly exposed may be obstructive and require removal on that account, irrespective of size.

INFECTION OF CHILDREN WITH BOVINE TUBERCLE BACILLUS.—Dr. Louis Mitchell (*Journal of Pediatrics*) mentions seventy-two consecutive unselected cases of tuberculous cervical lymphnodes in children. Guinea pigs were inoculated with tuberculous material as soon as possible after receiving it, and the lesions subsequently developing were the immediate result.

It soon became evident that he had to deal with two distinct groups of tubercle bacilli, one of which far exceeded the other in virulence for the rabbit. The groups he has designated luxuriant and sparse. The sparse group is a very large one and contains sixty-five viruses. All the cultures of this group grow very sparsely or not at all on glycerin egg and are assuredly of the bovine type. The

luxuriant group grows well on glycerin egg in primary cultures and succeeding generations and includes only seven out of the seventy-two viruses investigated. This division into luxuriant and sparse viruses has corresponded in all cases with the difference in virulence in rabbits.

By his study he is convinced that cow's milk containing bovine tubercle bacilli is clearly the cause of 90 per cent of the cases of tuberculous cervical lymphnodes in infants and children residing in Edinburg and district, and is responsible for by far the larger portion of tuberculous cervical lymphnodes in children during the milk drinking period of life. Bovine tuberculosis can, therefore, no longer be considered a negligible factor in respect to the spread of tuberculosis among children, especially since sterilized cow's milk in this country is a vehicle by which tubercle bacilli is most frequently introduced into the bodies of children. Until the proper legislative measures are obtained it is necessary for the public to sterilize cow's milk for the feeding of children.

Regarding the channels of infection, the faucial tonsils have in tuberculosis of the upper deep cervical lymphnodes an importance hitherto not well enough recognized or understood; that is, they act not only as most frequent portals of entry for the tubercle bacillus, but in a large proportion of the cases a well marked tuberculosis of the upper deep cervical lymphnodes is secondary to a small tuberculous focus in the tonsil (37 per cent). Mitchell so investigated the hypertrophied faucial tonsils removed from ninety children, in whom the cervical lymphnodes showed no clinical evidence of the tuberculous disease; six of these hypertrophied tonsils gave histologic evidence of tuberculous disease, while nine (10 per cent) yielded positive results when inoculated into guinea pigs. The bovine bacillus was present in three cases and the human in one case. The high percentage of faucial tonsils in which the bovine virus was present, Mitchell thinks, is further striking proof of the frequency of tuberculous cow's milk as a source of infection.

PYLOROPLASTY FOR GASTRIC ULCER.—Dr. J. M. Hitzrot (*Annals of Surgery*) reported a case of a laborer, twenty-nine years old, who was admitted to the New York Hospital on January 27, 1913, complaining chiefly of a pain in the right upper quadrant of the abdomen. He stated that he had suffered more or less from abdominal pain for the past fourteen years. In October, 1911, he had been operated on for cholelithiasis, and in the following February the abdomen was again opened, when a "wound in the gut" was repaired. Following this second operation he had an attack of vomiting about every three weeks, associated with severe epigastric pain. On July 1, 1912, a gastro-enterostomy and appendectomy was done at the Mayo Clinic, and following this operation the patient had remained perfectly well for three months.

Present History.—For ten weeks prior to his admission to the New York Hospital the patient had suffered from pain in the right upper quadrant, just below the costal margin. This pain was intermittent in character, and at times was so severe that he had fainted. It radiated through to the back, but never upward to the shoulder blades, and usually came on from half an hour to one hour after taking food.

Examination showed an indefinite mass on deep respiration in the right kidney region. There was a small hernial protrusion through a scar of the right rectus, with considerable tenderness over the upper part of the scar. Several blood counts were taken, which showed 100 per cent. of hæmoglobin, with 6,000,000 red cells, 15,000 leucocytes, and 64 per cent. of polynuclears. The von Pirquet test was strongly positive within twenty-four hours.

Operation by Dr. Hitzrot, February 4, 1913: A right rectus incision was made above the umbilicus through the old scar, and upon entering the peritoneal cavity, a mass of adhesions was found, especially about the gall-bladder. The pyloric region was freed from adhesions, and upon examining the stomach, the old gastro-enterostomy opening was found to be closed. The pyloric ring was narrowed and indurated, especially anteriorly and on the duodenal side of the pylorus. A typical Finney pyloroplasty was done, and on completing the anastomosis between the stomach and the duodenum, the opening was large enough to easily admit the tips of three fingers. The wound was then closed, a small cigarette drain and two pieces of gauze packing being left in the abdomen for drainage.

The wound healed primarily, and the patient was allowed up on the tenth day. He was discharged on February 15, 1913, and since then had been entirely relieved from pain and other symptoms of gastric disturbance. The diagnosis in this case was chronic ulcer of the stomach.

DUODENAL HEMORRHAGE.—Dr. Frederic Kammerer (*Annals of Surgery*) writes of a case of fatal duodenal hemorrhage, for which a gastro-enterostomy had been done and a pyloric exclusion attempted by tying off the stomach with a stout silk ligature, the condition of the patient precluding a von Eiselsberg's exclusion. The history and X-ray findings in this case had rather suggested the presence of some neoplasm in the small intestine than a duodenal ulcer. During the night before operation the patient had a severe intestinal hemorrhage, but his condition the next morning was not serious. At operation an unusally well-developed Lane's kink was found, nothing in the small intestine, but a typical duodenal ulcer, situated on the posterior wall, about one inch from the pylorus. An excision was deemed inadvisable on account of the many adhesions. The above-mentioned operations were done, during the course of which it became evident that hemorrhage from the ulcer had ceased temporarily, as the small intestine immediately below the ulcer contained no blood; but further down a blackish-blue discoloration, which extended into the large intestine, clearly indicated the presence of a large amount in the part of the intestinal tract. The patient rallied well from the operation, but 36 hours later he became restless, his pulse ran up to 130-140, his face became blanched. Six hours later, a donor having been found, an attempt was made to do a transfusion, but the patient expired on the operating table. At the autopsy a not very deep ulcer, almost a square inch in size, was found on the posterior wall of the duodenum. The base of this ulcer showed only moderate induration. Exactly at the center of the same a small opening was easily recognized, from which a drop of blood exuded. This proved to be an erosion in the wall of a branch of the superior pancreatic-duodenal artery, as a probe, introduced at this point, readily passed into the larger vessel. The speaker said this was the second case of fatal hemorrhage from a duodenal ulcer that he had observed during the past year. In the first case the hemorrhage was so severe that an operative procedure was out of question. A study of the specimen presented this evening had left some doubt in the mind of the speaker as to the wisdom of the course he had pursued—at least in this instance. At the autopsy the upper portion of the intestinal tract was also filled with blood, showing that renewed hemorrhage had occurred after gastroenterostomy and exclusion. The anatomical conditions at the site of the ulcer could, in all probability, have been successfully met by incision of the duodenum and some kind of ligature of the small bleeding point.

PSYCHOTHERAPY IN CHILDHOOD.—Dr. F. Hamburger (*American Journal of the Medical Sciences*) gives an excellent analysis of the treatment of psychical abnormalities in childhood. Based on the fact that these conditions depend in their development on the disposition of the child, in the sensitiveness of its nervous system, and the activity of its imagination, and on an irritating cause or psychical trauma, the treatment divides itself into etiologic, prophylactic, and symptomatic therapy. The etiologic treatment depends on finding out by careful anamnesis what the psychical trauma was or is, and then try to eliminate it. The vaso-neurotic type is especially amenable to this treatment and liable to psychical trauma. In this type of child, if no murmurs are heard over the heart area, the vasomotor symptoms are usually due to a psychical cause. The severe attitude or discipline of a tactless school teacher, or apparent or real neglect or unjust severity on the part of a parent are examples of psychic trauma in such cases. The prophylactic treatment aims to change the disposition, making the child less sensitive and more self-reliant. In this respect the child is "hardened;" attempt is made to undeceive his illusions, to accustom him to disappointments, and through a firm but loving training accustom him to meet difficulties and rebuffs. The symptomatic treatment is based on the fact that the psychical trauma acts like a foreign body, the voluntary or involuntary remembrance of which is continually calling forth the symptoms of the condition. This is best relieved by diverting the mind to other things. The best method is the so-called "awake" or "alert" suggestion, by constantly holding up before the patient the ultimate, complete cure of his ailment. This is embodied in various medicaments, believed by the child and the mother to have curative properties. In addition a change in environment will aid diversion and reiteration of the statement of ultimate recovery and gaining the child's confidence by tactful kindness, with a free discussion of his condition and an answering of all questions asked will have a beneficial effect on his symptoms.

OBSERVATIONS FOLLOWING THE USE OF COLLARGOL IN PYELOGRAPHY.—Cecil Vest (*American Journal of Surgery*) summarizes as follows: At operation collargol has been found in the kidney and perirenal tissues in five of our cases, and in one case in the peritoneal cavity. The kidney and perirenal tissues in these cases were colored dark brown or bluish black and were edematous. The amount of discoloration was noticed in one instance to extend throughout the entire retroperitoneal space of the side injected. In this case a retroperitoneal abscess developed which necessitated a second operation.

The time between the injection and operation varied from one to five days.

Both 10 per cent. and 15 per cent. solutions were used. No difference in the resulting clinical symptoms was noted.

Pain may be quite severe, lasting for two or three days, and once for ten days.

As shown by the charts, there may be a definite rise in temperature, 102° F. being reported in two cases and 104° F. in another.

While no case of nephritis has been shown to accompany these symptoms, there are definite urinary changes. The examinations have shown white blood cells, red blood cells, with hyaline and granular casts, to be present three days following the injection; casts for nine days; and albumen in two for twenty-four days; while in a third a trace was detected after 118 days.

In three cases where collargol was used, death has followed, but it is not evident that it was precipitated by the collargol.

Collargol should be used only when absolutely necessary.

It should be allowed to run into the renal pelvis in small amounts and under very low pressure.

A freshly prepared solution, not over 15 per cent., should be used.

It is necessary that the symptoms here mentioned be known by those using this method of pyelography, and especial care be exercised to avoid their occurrence.

On account of the results here shown, some other medium must be sought which will give a shadow by not injuring the renal substance. After a more extensive use of silver iodide emulsion, this material may be found to serve well.

HEADACHES DUE TO DISEASES OF THE CENTRAL NERVOUS SYSTEM.—Dr. Julian London (*Canadian Practitioner*) contends that if headaches due to particular diseases always exhibited the same characters and were always located in the same regions, we would possess in them one of the most invaluable symptoms from a diagnostic point of view. Unfortunately, there was nothing in the character or location of the headaches which surely distinguished the underlying disease. In consequence, it was necessary to look for other signs and symptoms before one could feel sure of the diagnosis. Dr. London then outlined a plan for the systematic examination of patients suffering from headaches. In regard to the causes of headaches, it was stated that all the causes acted by irritating the sensory nerves of the meninges or structures external to these. The brain itself was insensitive and extensive disease in it might exist without any pain, except the psychical pain of mental misery. The commonest headache was said to be the neurasthenic type. This was constrictive, pressing or squeezing. It was worst in the morning and might have disappeared by night. The hysterical type was commonly vertical and was usually sharp and boring. The next class mentioned was the form due to tertiary syphilis. This was an early, common, and almost constant symptom. It was worse at night and often very severe. In those cases in which it was due to arterial disease, it was important to remember that it might be a premonitory symptom of cerebral thrombosis. The headache of cerebral meningitis was a very significant and almost constant symptom, and was due to meningeal inflammation as well as to a general rise in intracranial pressure. The headaches due to cerebral tumors usually came on early and were due to a general rise in intracranial pressure. They often had great exacerbations which occurred either at night or in the daytime. Cerebral abscesses caused the same type of headache and were often not accompanied with a rise of temperature.

THE SEROLOGY AND TREATMENT OF TABES, PARESIS AND CEREBROSPINAL SYPHILIS.—Dr. William A. White (*Journal of Nervous and Mental Diseases*) reviews briefly the various steps in the progress of the treatment of syphilis of the central nervous system since the discovery of salvarsan, and told the experience which had been had with it, more particularly at the Government Hospital for the Insane. In general, the results in the treatment of tabes were more favorable than the results in the treatment of paresis, probably because the tabetic process is less deep-seated and inaccessible. The results of the Swift-

Ellis treatment in paresis are uniformly favorable on the laboratory side. There is a prompt reduction in the number of cells in the cerebrospinal fluid, with a corresponding fall in the globulin content and a tendency for the disappearance of the Wassermann reaction. In other words it is possible to make all four reactions normal. In general, however, a cessation of treatment results in a return of the laboratory findings. The clinical evidence is on the whole not as marked as the laboratory evidence, and although improvement does occur, the speaker was dubious as to its permanence. In all probability, the deeper-lying spirochetes are not reached and with a cessation of treatment there is every reason to expect a return of symptoms. Even were it possible to stop the process in the paretic brain it must not be forgotten that a certain amount of destruction must inevitably have taken place which will leave symptoms of defect, of the character of which, however, we have no criteria at present to judge. On the whole, the cases have not been under treatment long enough to warrant any final conclusions. While in paresis the process may not be capable of arrest, still the general result of the new treatment has been beneficial, first, because cases are diagnosed very much earlier, and if cure is going to be possible at all it is only going to be possible in the earliest cases, and secondly, because many cases are diagnosed that used to be thought paretics and consequently helpless.

THE MESOTHORIUM TREATMENT OF CARCINOMA UTERI.—Dr. A. Doderlein (*Muenchner Medizinische Wochenschrift*), in order to give the Bavarian Gynecological Society an opportunity of criticizing his results with mesothorium, has recently assembled two dozen treated cases for examination by his confreres. In all there have been one hundred and fifty-two cases of carcinoma uteri treated in the clinic with mesothorium, and the author's experiences have made him resolved never again to operate on a case of this nature. Of these one hundred and fifty-two cases twenty-six have since died. Of fifty cases treated during the first part of the year (1913) sixteen have been discharged, although the author does not claim they are cured, as five years must first elapse; twelve are still under treatment; in one case the treatment has been given up, of three no news can be obtained; eighteen have died. Some very charactertisic cases were presented before the society: absolutely inoperable cases which, after one or two treatments at the beginning of the year, were now considered anatomically cured. Some cases showed scar tissue contraction of the upper vagina, others so healed that it was hard to believe that carcinoma had once been present. Concerning the technique the most important point is the filtering of the rays. It has been shown that the previously used soft metals, like lead, have very strong secondary rays, and that it is these secondary rays that cause burns. Screens of nickle-plated brass have proved the most satisfactory substitute. Any rubber goods used about the patient during treatment must be free from sulphur, and iodoform gauze must not be used as a tamponade. There is no great difference between the action of radium, mesothorium and Roentgen rays. The examination of the twenty-four cases mentioned above during the meeting of the society convinced all present of the favorable results of the mesothorium treatment.

SYMPTOMS OF FOOT-AND-MOUTH DISEASE. —"In view of the recent outbreak of foot-and-mouth disease in the Mississippi Valley, the most extensive as yet in the United States," says *The Journal of the American Medical Association,* "a brief consideration of the principal features of the disease may be of interest. It is an acute, highly infectious disease, which occurs chiefly in cattle, sheep, goats and swine, though other animals, such as the horse and dog, as well as certain wild animals are attacked also, and it may affect human beings. In animals it is characterized especially by the eruption of vesicles in the mouth and on the feet, in some species more in the mouth, in others more on the feet. In cattle the incubation period averages from three to five days, whereupon a moderate fever with loss of appetite and other general symptoms sets in. In two or three days small blisters appear on the lining of the mouth, and now the fever usually subsides. At the same time one or more feet may show tenderness and swelling of the skin, soon vesicles form here also, and the animal goes lame. In the mouth the blisters may reach half an inch or more in diameter, but usually they are smaller; the contents, at first clear, become turbid, and as the covering bursts, small painful erosions are produced which either heal quite promptly or turn into ulcers that heal more slowly. Usually the milk is altered and reduced in quantity; blisters and ulcers may form on the udder. There is marked loss of weight, as the animals do not

eat because of the pain. In this, the ordinary form, in which the death-rate is very small except among the young, the symptoms fade away in from ten to twenty days or so, except when complicating local secondary infections delay recovery, but there are also severe forms with extensive infection of the respiratory tract and gastro-intestinal inflammation, which frequently end in sudden death. In such severe cases ulcers are found in the stomach and intestines. In sheep and swine, lesions of the feet predominate. The disease is transmissible to the fetus in utero."

RETRODISPLACEMENT OF UTERUS.—F. C. Holden, Brooklyn (*Journal A. M. A.*), discusses the causes of failure in the operative treatment of retrodisplacement of the uterus. He gives the anatomic facts and says that the following things are to be considered in determining the operative procedure: First, the age of the patient; if in the child-bearing period nothing should be done that will interfere with pregnancy; second, the condition of the pelvic floor; and, third, the position of the cervix and whether it can be replaced in the hollow of the sacrum. He mentions some of the complications and failures which followed the use of the well-known methods, and sums up his conclusions in substance as follows: The gynecologist must be strong in discriminating and must receive as fundamental the proposition that the cervix must be placed upward and backward in the hollow of the sacrum. No one operation already devised or to be devised will meet all cases. Each case has its individual peculiarities and individual treatment. In Holden's opinion the Alexander, Kelly, Ohlshausen, Wylie, Freund, Coffey and Emmet-Baldwin methods, with the addition of the Reynolds operation in cases in which a shorter anterior invagination of the cervix exists, present a sufficient number of points of departure for, loosely speaking, every case. Having made his selection of the main procedure it remains for the operator to add the individual modifications as required by the case before him.

TREATMENT OF VARICOSE ULCERS OF THE LEG.—Henschen (*Edinburgh Medical Journal*) strongly advises the following treatment for varicose ulcers of the leg which have begun to granulate in a healthy manner. The limb is first elevated for 15 to 30 minutes and massaged upwards. The skin of the leg is shaved and thoroughly cleansed, and then the ulcer is strapped in the following manner: A series of strips of plaster 4 to 5 cm. wide and one and a half times as long as the diameter of the limb at the ulcer, are applied from below upwards so as to overlap and cover in the ulcer. The plaster is applied by placing the middle of each strip on the back of the limb and crossing the ends over the ulcer, and it is essential that the plaster should be applied very firmly. Each strip should overlap the previous one by two-thirds, and the strapping should extend from well below the ulcer to some distance above it. A few layers of gauze and an ordinary bandage are applied over the plaster. If perforated plaster is used through which discharge can escape, it can be left on for 2 to 4 weeks, the overlying gauze being changed when necessary. The patient follows his usual avocation, and healing goes on steadily under the strapping. Henschen recommends a perforated strapping known as "Klebrobinden," as especially suitable, owing to its being porous, elastic, and unirritating. It is interesting to note that this method is a revival of a plan described, according to Henschen, by Baynton, in London, in 1797.

MIXED STARCH DIET IN DIABETES MELLITUS.—Dr. H. Falta (*American Journal of the Medical Sciences*) advocates a diet of mixed starches to combat acidosis in diabetes mellitus, instead of confining the carbohydrate to a single form of starch, as is the case with the use of oatmeal as advocated by von Noorden, or the "potato cure." The principle of his method is that carbohydrates are given liberally in the form of different starches only. Falta makes use of gruels or soups of rice, corn, barley, tapioca, potato, spaghetti, noodles, or various starches made into crackers or bread. The practical importance of such a diet is that it is not so monotonous as the oatmeal diet and can be given over longer periods of time. The author emphasizes the importance of excluding from the diet all forms of animal albumen, such as meat, eggs, cheese, milk, etc. "Vegetable days" or "fasting days" are interposed between periods of liberal feeding and are most important in order to secure the best results. Falta says that, theoretically, the presence of animal albumen in the diet diminishes the formation of glycogen in the liver and consequently more sugar passes through the liver into the

blood. In severe diabetes, the organism is unable to use this sugar on account of pancreatic insufficiency. Falta has obtained striking results in the treatment of severe diabetes by a diet on these principles. The diet must be persisted in, for often the results at first are not marked, but careful and persistent dieting leads to permanent improvement.

THE RŒNTGENOLOGIC METHOD OF DIFFERENTIATION BETWEEN ULCER AND CANCER OF THE STOMACH AND DUODENUM.—Dr. Arthur F. Holding (*American Journal of the Medical Sciences*) has reached the following conclusions:

1. The Rœntgen method is the most accurate and at the same time the most expensive single method of diagnosing gastro-intestinal lesions. It is also the safest and most valuable to the patient.

2. A preoperative Rœntgen examination in abdominal cases (a) will save many a case from the shock of an exploratory operation; (b) should shorten the time consumed at the operation; (c) should improve surgical statistics.

3. An exploratory operation for diagnosis is usually evidence of inadequate Rœntgen methods.

4. A postoperative Rœntgen examination of abdominal cases will lead to important modifications in the technique of such operations, just as post-treatment Rœntgen examination of fractures has modified general surgical methods.

5. The subject can scarcely be summarized more tersely than has been accomplished by Schmieden, who says with both wisdom and moderation: "A scientific diagnostician will not diagnose gastric lesions on Rœntgen-ray examinations alone, nor should he diagnose important gastric lesions without using the Rœntgen rays."

THE LOCAL TREATMENT OF CANCER.—In writing on the rational treatment of cancer De Keating-Hart (*Practitioner*) says of its local treatment that a localized cancer in its early stage can be definitely cured by local treatment, but when the disease has extended beyond certain limits and produced serious destruction, it has passed beyond the realm of actual therapeutics, and we can only limit its ravages without arresting the final disaster.

Incurable Cancer.—It is imprudent definitely to pronounce a cancer incurable; cures have been obtained even when metastases have developed. When a cancer becomes general, attacking vital organs, and establishing a grave cachexia, it would be futile to adopt other than purely palliative measures.

Curable Cancer.—Within the past few years, X-rays and radium have revolutionized the treatment of cancer condemned as inoperable, and the application of fulguration after an extensive operation has given most gratifying results. Curable cancer may be divided into operable and inoperable. When practicable, an operable cancer should be removed. To submit a growth to the action of X-rays, necessitating a protracted period of therapeutic treatment, involves a grave risk of auto-infection; whereas, by excision of the growth and the competent application of fulguration, the patient is given an increased chance of recovery, which should not be ignored.

TUBERCULOSIS CULTURE FROM THE BLOOD.—H. K. Faber, New York, (*Journal A. M. A.*), reports his production of a successful culture of tubercle bacilli from the blood, post mortem, of a tuberculous child. The blood was taken directly from the heart cavity and the culture which was not originally attempted for a demonstration of tubercle bacilli was made on agar slant and its success was unexpected. Inoculation experiments were made on guinea-pigs, verifying the culture. The conditions were such that aerobiosis was complete and the temperature and moisture conditions were favorable. A careful review of the literature has failed to show any other instance of the culture of the tubercle bacilli being obtained from human blood.

IMPROVED TECHNIC FOR ELECTROCARDIOGRAPH.—According to *Kentucky Medical Journal*, with the ordinary technic one never knows from what part of the heart the electric current is proceeding, and hence it is impossible to obtain records under exactly similar conditions for comparison with other cases or even with other records of the same organ. Mayer says that he has overcome this difficulty by taking the record as the patient reclines in a zinc tub filled to a certain mark with water. The volume of the body plus the water is thus always the same, and the area of condition is so large and so far from the heart that minor differences become equalized.

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INTERNAL SECRETIONS, WITH ESPECIAL REFERENCE TO ADRENALIN.

The remarkable powers exercised by the various glands which carry on internal secretion, according to an editorial in the *Therapeutic Gazette,* afford a fertile field for physiological, pharmacological, and therapeutic research. The extraordinary influence exercised by adrenalin upon capillary networks is found to be one of its least important attributes. It would seem that by the study of the internal secretions we are rapidly gaining not only definite knowledge as to their action, but a better conception of a number of physiological functions in portions of the body where ignorance has heretofore held sway. As Hoskins says, in an interesting article which has recently appeared, "although the last word in regard to the functions of the adrenals has by no means been said, enough evidence has accumulated to justify certain conclusions which will probably stand the test of further research." He points out that adrenal secretion has a remarkable selective affinity for portions of the sympathetic nervous system, a system which heretofore has been largely a *terra incognito.* When an organ has a sympathetic nerve supply adrenalin seems to always influence it, whereas if it has no such supply adrenalin seems to be powerless. Where the functions of the sympathetic end organs, or so-called receptive substances, are associated with increased activity of an organ, adrenalin stimulates such activity, and where their function is to exercise a sedative influence adrenalin increases their functional efficiency. As the sympathetic nervous system exercises control over a number of important vital processes, adrenal secretion, therefore, is a most important factor in life, and when it is recalled that adrenalin in the proportion of one grain in 1,500 gallons of fluid is capable of exercising an influence on a strip of isolated muscle from the intestine, some conception of its powers may be obtained.

It is probable, too, that the amount of adrenalin secretion is governed by a number of factors. Thus, it has been shown that the checking of intestinal peristalsis, often associated with profound emotion, is apparently due to an increased adrenal discharge due to this nervous cause. Hoskins goes so far as to state that the adrenal secretion aids the body in conditions when aid is immediately necessary. It increases the activity of striped muscle, and by the inactivity of the intestinal contents, which it induces, it provides the voluntary muscles, the heart, and the respiratory centers with large amounts of blood when active muscular effort is necessary to combat or to escape danger.

Not only is this true, but the increased secretion of adrenalin under these circumstances results in the setting free of an increased quantity of dextrose in the blood, thereby providing the muscles which are being actively exercised with an increased amount of material with which to develop energy. Hoskins also thinks that the dilatation of the peripheral bronchioles induced by adrenalin, which has so useful an effect in cases of asthma, is an advantage in the presence of severe muscular effort in that it opens the respiratory passages more

widely and therefore aids the respiratory function.

Cannon and Nice, as well as Gruber, have found that the efficiency of a fatigued muscle and its recovery from fatigue are greatly hastened by the injection of adrenalin, and Cannon even suggests that the pains of labor are of direct use to the mother in that they result in adrenal discharge, increasing her muscular efficiency and inducing uterine contraction. Possibly the condition of an excess of dextrose in the blood when the adrenals are freely secreting is the reason why diabetics increase their sugar output when suffering from emotional disturbance or nervous strain, and possibly this increase in adrenal secretion is responsible for increases in blood-pressure in cases of arteriosclerosis or arterial spasm, the result of which may be cerebral disaster or cardiac strain. The chief objection to this latter theory is that very small doses of adrenalin have been found to lower blood-pressure rather than to raise it, and it is probable that the amount of adrenalin secreted at any one time is almost infinitesimal as compared to the quantities which are given intravenously or hypodermically by the physician or surgeon.

It must not be forgotten, however, that like other glands concerned with internal secretion, the adrenals apparently secrete two substances which in one sense are antagonistic or at least differ in their action. Up to the present time the use of adrenalin in animals suffering from extirpation of the adrenals has not served to save life, nor has it proved of value when these glands are suffering from disease in the human being.

Finally, we believe that further investigation will reveal that there is, in political parlance, an "interlocking directorate" between all the internal secretions, and until this interlocking directorate is better understood, a large part of our employment of extracts obtained from the glands of internal secretions must continue to be largely experimental.

THE GREAT WAR.

The one thing that stands out clearly as a result of the great upheaval which is now going on in Europe to prove the falsity of the brotherhood of men, says an editorial writer in the *Interstate Medical Journal* is the indisputable fact that so far as we are concerned, medically speaking, the advantages are all on our side. We say this because, though there may be a number of disputes among our doctors as to which side will win and some friendships will be broken on account of heated argument, the really delightful chapter to record is that at least for a year or so we shall be spared the boredom of listening to some doctor, recently returned from Europe, whose smatterings of foreign knowledge and foreign languages have always been of that exalted type which adds to the gaiety of life in our American cities. The hundreds of medical men, who go abroad every year to get a veneer that passes muster in villages, but is of small account in our larger cities, will have to content themselves with reading English, a language that is rich in treasures, so rich that many years are necessary to find even a small part of them. They will also be compelled to visit American clinics at post-graduate schools if they desire further knowledge and experience, and though they will come away with no idea of *der, die, das,* and whether Herr Professor von X is a believer in asepsis, they will at least be better Americans, because they will be true to themselves in so far as they will achieve what their citizenship requires of them—a better understanding of their own institutions and of their own language. A sojourn of six months in Germany has never benefited anyone in a medical sense, and in a social has made insufferable cads of material that, had it remained at home, would undoubtedly have improved and been of some comfort and pleasure to others and perhaps an ornament to the medical profession. So let us write in large, fat letters so that even the most nearsighted can see, our intense delight at the thought that our ears for the next twelvemonth or so will not be assailed by ungrammatical German and anecdotes about "the professor who was so kind that he turned his whole clinic over to me twice a week."

We are hearing a deal just at present about our much-to-be-wept-over condition because German preparations are not forthcoming, and what an irreparable loss the absence of these drugs is to the American medical profession. While we appreciate that men who are accustomed to writing prescriptions calling for drugs made in Germany must be in a deplorable state of mind, would it be no solace to them to know that quite a number of books have been written

in English on the subject of materia medica and that we boast an excellent "Dispensatory?" Of course, to go back to the reading of these books would entail work, but would not the knowledge gained compensate the labor? We think it would; and we also feel that by doing so a few seeds of the right sort of patriotism would be planted in their breasts to prevent in the future that cry of dependence on foreign medical thought and drugs, especially of the German sort, which is now going up in this country.

The dependence of American medicine, of American literature, of American art on Continental ideas has always put us in a ridiculous light with other English-speaking peoples, and in no other country but ours can one see the transplanting of these ideas without the slightest effort to change them to fit the trend of national thought and characteristics. We graft them in the most audacious manner, and especially in medicine do we sin to such a degree that if we had any sense of humor our midriffs would be tickled not once a day but many times. Of course, an interdependence of thought throughout the world must obtain, otherwise there would be no progress, but this should never deteriorate, as it has with us in medicine, into a dependence that is almost a vassalage. It was not thus several decades ago, and now that the opportunity presents itself, is this not the moment to break the chain?

We are not writing these lines in bitterness, we are merely calling the attention of medical men to what has resulted from their purblindness. We know just as well as they do in what respect American medicine is lacking, and we know just as well as they and perhaps a little better, that a limited invasion of Continental medical ideas is at present absolutely necessary to further our knowledge. But what they do not know and will not know until they become close students of our literature, be it purely belles-lettres or scientific or medical—and English literature is meant as well as American—is this, that more will be gained from reading books in English than in any other language; for though they may "plough" through a work in a foreign tongue with a perseverance and endurance that is highly commendable, their gain will not be nearly so great as it should be. Moreover, they will be taught again and again the admirable qualities of their own language.

NEW DRESS OF THE ANNALS OF SURGERY.

Owing to the continually increasing amount of material offering for publication in the *Annals of Surgery*, the publishers have found it necessary beginning with the July, 1914, issue to enlarge the size of the page, which will enable the publishers to make a better display of the illustrations.

Thirty years ago, when the first number of the *Annals of Surgery* appeared, a single number contained only ninety-six pages. They have continued to increase each year until now the average number of pages to an issue is 164.

The new form enables the publishers to give the reader more material and greater comfort while reading than it could have been possible for them to present in the former size.

The July issue is a splendid example of the way this publication continues to set the pace in surgery.

The St. Louis Society for the Relief and Prevention of Tuberculosis reports 114 new cases of tuberculosis found and treated by the society during June. This is a much larger percentage than in any other month and is due to the increased facilities of the society and the larger number of visiting nurses employed.

The recently completed infirmary building of the State Sanitarium for Tuberculosis at Mt. Vernon has been turned over to the state by the contractors. The building is one of the most modern and complete of its kind in the country and was erected at a cost of $35,000.

Following an external urethrotomy if the perineal fistula is very sluggish in healing and urine persists in coming through, it is very likely that an obstruction to the stream in the urethra still exists. Of course, as long as such is the case there will be no healing of the perineal wound.

In asthma paraldehyde affords rapid and complete relief in the majority of cases, the initial dose being forty to sixty minims. A few cases need an additional dose of two-thirds this quantity an hour or so later. The hypnotic action of the drug is also especially valuable when the attack comes on at night.

NEW BOOKS

Narcotic Drug Diseases.

The Narcotic Drug Diseases and Allied Ailments, Pathology, Pathogenesis, and Treatment. By George E. Pettey, M. D., Memphis. Member Memphis and Shelby County Medical Society, American Medical Association, American Society for the Study of Alcoholic and Narcotic Diseases, etc. Illustrated. F. A. Davis Company, Philadelphia, publishers.

Starting with the basic thought that drug habitues are in most instances the blameless victims of disease, and that they are entitled to rational and skillful medical help, rather than the refusal of aid and scorn, Dr. George E. Pettey, the well-known specialist in drug addictions, offers a volume intended to supply the physician with a knowledge best calculated to help this class of sufferers. Few physicians take the least interest in drug addictions; fewer still make a serious effort to equip themselves for the successful treatment of these cases. It may be that institutional treatment offers the best chance for successful results, but in many instances it is neither possible nor advisable to send the patients to institutions for treatment. One purpose of Pettey's book is to bring it within the general practitioner's sphere to treat drug addictions. This broad land of ours is filled with men and women who would barter their souls for release from the thralldom of liquor or opiates, but are unable to go away for treatment. If the study of this book would enable a physician to cure or alleviate one sufferer—then its purpose will not have been in vain.

The Operating Room and Patient.

The Operating Room and the Patient. By Russell S. Fowler, M. D., Chief Surgeon First Division, German Hospital, Brooklyn, New York. Third edition, rewritten and enlarged. Octavo volume of 611 pages with 212 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.50, net.

One of the chief aims of such a work lies in making possible a simplification and standardization of operative technique, a consummation devoutly to be hoped for. The author, Dr. Russell S. Fowler, knows the every detail of his subject, whch is presented in a clear style. The chapters devoted to the preoperative preparation of the patient and to his anesthetization are of particular value not only to the house surgeon but also to the operator himself who may not be fortunate enough to have at his command a smoothly working organization taking such details off his hands. The chapter on bandaging also will be found of practical utility. All illustrations, of which there is a generous abundance, are clear and instructive.

Manual of Medicine for Nurses.

Manual of Medicine for Nurses. By George H. Hoxie, M. D., Physician to the German Hospital, Kansas City, Mo., and Pearl L. Laptad, formerly Principal of the Training School for Nurses of the University of Kansas. Second edition, rewritten and enlarged, 12mo of 351 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $1.50, net.

The greater part of this manual deserves commendation. Its frank purpose is to give the nurse, either professional or amateur, a sufficient insight into ordinary practice that she may make a better application of her own work.

In a list of the "more important diseases and their management" the author includes mytilotoxism, ichthyotoxism, kreotism and tyrotoxism. Surely simplier words would be more suitable for a work of this character.

The Philosophy of Radio-Activity.

Philosophy of Radio-Activity or Selective Involution. By Eugene Coleman Savidge, Member New York Academy of Medicine, New York Obstetrical Society, American Medical Association, etc., etc. Wm. R. Jenkins Company, New York, publishers, 1914.

This volume of 150 pages does not possess any interest for the general medical reader. Its title is an index to its contents.

The *Century* announces among the articles dealing with war in its December issue "Russia a Nation United by War", a picture of the remarkable changes wrought in the internal affairs of Russia, written by a well-known English author who was with a Russian officer during the recent mobilization of the Russian armies.

"I do not think," says the writer, whose name for personal reasons will not be disclosed, "that it is yet realized outside Russia how good a turn Germany served the Russian Government, and ultimately the Russian people, when she dictated Austria's note to Servia and compelled Russia to make preparations for war."

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ON THE INTERNAL SECRETION OF THE UMBILICUS

By GEORGE RICHTER, M. D., St. Louis.

The internal secretion of the umbilicus is one of the greatest discoveries of the future. To understand it well a short review of our knowledge in this direction seems necessary; it will not be long because we know nothing about it.

Humoral pathology of 100 years ago, still the firm belief of those who talk of impure blood and rejuvenated in the grand phrase of eliminating toxins—an unknown class of supposed existence—was superseded by cellular pathology. This became never very popular, probably because it has no experimental character and does not culminate in odd prescriptions. It was followed by bacteriology. In this country bacteria are still believed to be the cause of every disease, for they are omnipresent like the Almighty, and the proposition is so very simple. It is readily shown that bacteria die in their own dirt, as man would if thrown in a sewer; we inject their products to kill them. It's a pity, however, that disease will run on even after the bacteria have become inert. Set a house afire with a match. Extinguish the match. The house continues to burn. Of course we can smother the fire by covering the house with ashes.

The trouble we recognize to be due to disturbed functions, frequently caused by bacterial activity. This has led to a closer study of metabolism and in our wisdom we have determined the amount of food required: proteids, fats and carbohydrates, a certain number of calories in proper proportion. Now come some men and show that that is not enough. Strange organic compounds, vitamins in food, are indispensable to health and life. Also the lack of the much despised spices was evidently harmful. The indifferent mineral salts, the contemptible ash, plays a non-negligible role. Their absence causes beriberi, neuritis, scurvy, pellagra, rickets, cachexia, etc. Quantitatively excreted as they had been consumed they carry ferments, oxidases, catalases which keep metabolism going. Eventually they become inert and then are thrown off.

They are active in all organs, are apt to induce disease and bacteria have nothing to do with it.

Another whack at bacteriology in its exaggerations came from the surgeons. Extirpation of goitre caused myxedema, of the parathyroids tetany, of the ovaries other general disturbances, disease of the hypophysis acromagaly, of the pancreas diabetes, of the adrenals Addison, etc.

Health evidently depended upon the presence of certain organs in proper condition with a remarkable correlative function, termed "concensus of the parts". It was proven by extirpation and transplantation. Some of their products have been analyzed, adrenalin is now synthetized by the chemist.

There can be now no doubt that the nervous apparatus—principally the sympathetic nerve—plays here a certain role, which may console the neurologists who had been gently pushed aside during later research.

To the list of organs furnishing internal secretions there must be added now another one which has been sadly neglected, the UMBILICUS, *the navel.*

The navel is the middle part of the body (Webster), in the new-born the middle of the body, in the adult the center of gravity.

Umbilicus, navel, nave, hub mean the same thing, the Center of things. So was ancient Rome—omphale—the navel of the then known world, just like Boston, the hub of intelligence (before Simon Flexner's time, however). Navel in German is Nabel, plural naebel (nebel, fog). Such a plural occurs when one Nabel is put on another one. I have stated before that to internal secretion, to its definition belongs the "concensus of parts". A valuable argument for the navel's internal secretion.

Not all men had navels. Adam and Eve

had none. The organ is not inherited but congenital.

The dignity of the organ is shown by the fact that surgeons will avoid cutting it, and even pathologists cut clear around it at autopsies. It has, therefore, been little studied. Research is difficult. Frogs and chickens are difficult objects for such studies. The sausage has two navels (ligatures of intestine). The cheese has none. *The navel authorities,* even Secretary Daniels, seem to know little about it. One of my friends specializes on the umbilicus, but like many other specialists he keeps his superior knowledge as a valuable secret.

The origin and anatomy of the umbilicus I need not repeat. After severing connection with the mother it attains much interest. It is often the first part of the body to be attacked by disease—infection—tetanus. It has a predilection for eczema. Its first relation to civic institutions is by red tape. Soon it goes into retreat and when uncovered peeps slyly from its hiding place. Closely observed it seems to wink—but *"how-wink"?* It possesses a peculiar beauty in the young of the other sex. In men who suffer from the consequences of the habit is assumes a fierce aspect as the center of the caput medusae. It retains its youth through the whole life, or who has ever observed any change in old age? Artists delight in picturing it. But all this gives no clear conception as to its function. In pathology we know of the umbilical hernia which interferes greatly with its beauty. More interesting is its relation to Meckel's diverticle. Here cysts occur, even lined with ciliated epithelium—a most noteworthy fact! Not only this, occasionally one has discovered there, in the navel—pancreatic tissue. Hypertrophic processes have resulted in the formation of adenoma of the navel. All this proves conclusively the glandular character of the umbilicus. And it follows that there must also be a secretion. But of what kind? It can be only of a very subtle nature, as its relations to blood and lymphatic vessels are poorly developed. Navel, or German nabel, latin analogous to nebula, or fog, means a moist vapor. Moist vapors are frequently observed thereabouts. French "vapeurs" have direct relations to the state of mind, not to thinking, but to the subconscious. I claim, therefore, that the navel is the seat of the soul—and not the brain. For people without brains still may have a soul, be it ever so minute. And all people have an umbilicus, excepting Adam and Eve, who had brains, but no navel, and, therefore, invented the sin.

But I will have to bring further proof for my contention. Those who have observed a dancing navel in the hutchy-cutchy will testify that it is full of subconscious thought, exciting the whole soul. The navel thrones above the most important and noble organs, the entrails. Ancient priests immolated the entrails to the gods (who must have been very fond of tripe), and ate the roast themselves. Everybody knows how subconscious thought travels and permeates all viscera, and from where could it issue, if not from the navel? A study of the navel reveals the character of its owner. Behold a young woman's umbilicus —if she'll let you—you read her character, yea her thoughts. Show me right now your own navels and I shall prove that I can read your character right.

The center, the umbilicus of the A. M. A., who is it? Are those edicts termed editorials manifestations of such internal secretion? Moist navular vapors? And behold their belly-dances!

Thus the navel is the source of energy of a certain kind. Through it the sap of life entered the fetus. Its individuality is established only after it has cut loose from the mother. And what characterizes it further, is that the navel is neither male nor female. It is neither, it is either. Its small size reminds of other small glands of importance, like the pineal, or the coccygeal, or the brain of some competitors in the field of medical education.

Their naval officers navigate in an ocean of liquid gold. Simmons and Flexner are their pilots and Rockefeller's navel their haven and port. They must have a hypertrophy, or an adenoma of the umbilicus, the cysts are lined, not simply with ciliated, but *super*ciliated epithelia. Their pancreatic rests must be islands of Long John—Langerhans—(Rockefeller) producing toxins of egotism and jealousy.

At them, you surgeons, and cut out their navels, make it a veritable massacre, not of ovaries, or of appendices, but of a most vicious malignancy!

The internal secretion of their umbilicus would be a venom to poison our best efforts in educating plain but energetic young men, who are fully as clever as the sons of the rich. And generally more deserving. The healthy secretion of a normal navel, subconscious thought, reveals the true character, it is essentially altruistic. And so are our best efforts. May they be successful, may our umbilicus remain clean and joyful. May it overcome all egotistic instincts.

THE NEED OF GREATER KNOWLEDGE

By GEORGE L. SERVOSS, M. D., Gardnerville, Nevada.

Every once in a while our attention is called to the fact that we are weak in our understanding of drugs and applied therapeutics. Attention was called, in the May issue of the St. Louis Medical Review, to an editorial in the Medical Standard in which the editor emphasized the fact that we should give more study to drugs, as individuals, and pay less attention to the research workers, and the editor of the Review agreed with he of the Standard.

We have in the past given altogether too much heed to what a few research workers have had to say; men of the laboratories, not active practitioners. We have also given too great heed to the sayings of those men doing a consultation practice, and consequently rarely seeing their patients through the entire course of any particular disease.

We have placed too little reliance in our own selves and have been all too ready to accept the teaching of the two classes above mentioned, without having made many, if any, investigations on our own part. If a few men, working in the Laboratory and usually with healthy animals, tell us that cactus is an inert drug (and this has been done), many of us accept their assertions as final and forever and ever, thereafter, place that drug on the taboo list. There are others of us who not only listen to these self-appointed authorities, but who, when a few or many active internists tell us that cactus is worth while, investigate it ourselves and apply it in face of certain heart conditions in the sick human. AND WE GET RESULTS, regardless of what the laboratory worker has to say.

The laboratory worker and the consultant, who sees his cases so infrequently and consequently rarely knows the exact action or effect of any remedy, have repeatedly told us that the intestinal antiseptics are next to worthless; that it is a physical impossibility to render the gut aseptic; that an infection in that organ must continue to the bitter end, regardless of what we may do with those agents which either destroy or inhibit bacterial growth and proliferation. On the other hand, he who is dealing with the sick human, the one carrying an intestinal infection, if he be possessed of a mind of his own, exhibits this class of remedy and gets results, and that despite the fact that it may be impossible to kill all of the micro-organisms within the alimentary canal. He finds, after clearing the bowel with calomel, either alone or in combination with podophyllin and a bile salt, and following such purge with the sulphocarbolates, that the majority of simple diarrheas cease to be and that there are no recurrences. In typhoid fever he finds that the disease is limited, both as to length of duration and fury, through the use of the intestinal antiseptics to effect, or the bowel actions are of normal consistency and withour odor. It is the general practitioner of internal medicine who has established such fact; the man who has the nerve to make investigations on his own part, and that in the face of assertions by the self-styled authorities.

Not long since William J. Robinson, that man of mighty mind, took occasion to find fault with the J. A. M. A. and its managers because they advised the doctor to "waste basket" every piece of literature coming from any manufacturer, saying that it was a waste of valuable time to even take such matter out of the post office. I believe that Robinson was right in his criticism. I, for one, give but little heed to the assertions and advice of those self-appointed authorities connected with the A. M. A., as I have reasons to believe that they do not invariably know all about everything. Like Robinson, I have gained much valuable information from the literature of the proprietary houses and that regardless of the fact that I may not have placed much, if any, faith in their productions. I have found that the legitimate manufacturers are, as a rule, very careful regarding that literature which they place in the field, in fact, much more so than are the managers relative to what appears in the J. A. M. A. These manufacturers realize that they have something at stake and that, although they may make misleading statements once or twice, they cannot continue so doing indefinitely. They cannot say that they are not responsible for the assertions of their contributors, as does the J. A. M. A. and in fact practically every journal published. They must be more or less responsible or fail in their efforts. In many instances the first data we have had on some of the newer drugs has been in the shape of literature from the manufacturers, and much of it has been just as scientific as was ever a paper from one of the so-called authorities, an editorial in one of the ultra-scientific journals,

or a chapter in a text-book. I have compared much of the proprietary literature with the text-books and as yet have found but a few putting forth assertions of a groundless nature, absolutely. As Robinson says, the doctor is supposed to be a man with average brain and should be able to differentiate between the worthy and unworthy. I have found the reading of this class of literature one of the means of gaining information relative to drugs, their actions and effects.

The "Twilight Sleep", now being given so much attention, and all because of an article in one of the lay magazines. Again do we find the laboratory workers and those in consultation practice telling us that we must not employ scopolamine and morphine or hyoscine and morphine, and we find many accepting this advice without question and condemning this practice. Those who have been quietly employing hyoscine and morphine for the relief of women in labor here in America know that these agents are not one-half as dangerous as those mentioned above would have us believe. They have applied these drugs in actual practice and made definite demonstrations and know whereof they speak, and from practical experience. These thousands of men do not tell us that they get a large preponderance of "blue babies" or that their women are really ever in danger at any time, as they assert that neither are true. They have done their own research work and learned how to employ these agents and when. They know, from personal observation, that the doses originally advised are too heavy and have made such reductions as will gain the best results. Those who find fault with the "Twilight Sleep" are those men who, after the first condemnation of both scopolamine and morphine and hyoscine and morphine, dropped both and never gave them subsequent attention. Had chloroform or ether been dropped for the simple reason that a few disasters followed their exhibition it is very probable that surgery would still be where it was a century ago. The reason that they were not dropped following a few disasters was due to the fact that we were neither cursed nor blessed with an astute Council at the time of their introduction. Not being found fault with, these agents were given study and a greater knowledge of their actions and effects gained. No one, not even a member of the Council, would have the temerity at this time to advise the non-use of either of these important obtunding agents.

The great trouble lies in the fact that much of the advice given us is "half baked". Too many drug agents are condemned without sufficient hearing. If they do not prove active in the person of the healthy dog, rat, guinea pig, rabbit or other animal, it very frequently follows that they are placed on the taboo list and that without much, if any, clinical application in the sick human. Instead of accepting such condemnations with "a grain of salt" and for what we believe them to be really worth and submitting the agents to application on our own part, and in the sick, we are too prone to listen to the so-called authorities and act according to their dictates. We are the losers thereby, I have reason to believe, in a vast majority of instances.

If you will follow the work of the Council you will frequently find that they are more or less insincere in their advice and are prone to change their great minds as time goes on. Two or three years ago a digitalis product, carrying all of the glucosides of the drug, was submitted to the council and was rejected, it was said that the glucosides were not green, as was the product under discussion. That seemed to be the only reason offered for rejection. The doctor was told not to use this product, as it was no better than others on the market and was too high priced. A few months later I was surprised to see this self-same product given a place in the list of New and Non-Official Remedies, and without the least fault to be found with it. A nuclein product was offered and rejected several years ago and then in a few months accepted. No change, according to the manufacturer, had been made in either of these products in the meantime. These are two examples that have come directly under my observation and I have reason to believe that there have been others. I noticed both these occurrences because of the fact that I have been employing both products and with good results, even in the face of the primary condemnation, and had based my ideas relative to their worth upon results gained in my own practice.

We find the Council, as well as the managers of the J. A. M. A., prone to condemn American made proprietaries, but giving both praise and advertising space to some of the high priced German made synthetics. They tell us to use the U. S. P. and N. F. products, which are "the same as" the American proprietaries, but which we so frequently find are very different in every way. Personally, I would rather employ a well made and active proprietary than the best U. S. P. or N. F. substitute ever made. I would not, however, generally employ any drug, be it a simple chemical, or drug, or proprietary without first

giving it a thorough trial clinically and noting its effect in the sick human.

We all, even those who have made applied therapeutics a study, gain greater knowledge relative to the use of our drug agents. None of us know it all. Even we who have determined that we know all about some individual drug, rarely pass a day without discovering something entirely new about it.

I do not say that we should disregard the Council and its advice, but we should not accept all said by that body as absolute and final. We should, as both the editor of the Standard and Robinson have said, exercise our own minds and reach our own conclusions, and the latter as a thorough investigation of everything offered, remembering that all men are liable to err.

HEALTH PRESERVATION

By D. L. Field, M. D., Jeffersonville, Indiana.

The word Sanitary is derived from the Latin "Sanitas" which means healing. At the present time it has a wider application, signifying the maintenance of such healthful conditions as will protect the individual, and the public, against disease; the result of filth, poisonous exhalations, etc.

Hygiene is from the mythical goddess "Hygeia". Hygiene means such private, individual, and public conditions as will preserve bodily, and therefore, public health. Sanitary laws are as old as the history of mankind. Moses was well posted on sanitary rules and regulations. His knowledge was derived from the Egyptians. Cities and communities are more especially charged with keeping the public from such conditions as are unsanitary.

Gustatory Excess.

That many lay the foundation for disease by gluttony is only too well known by medical men. Brain workers and those who follow sedentary pursuits should eat sparingly, and indulge very little in animal food. Eating is largely a matter of habit, as we ofttimes eat because the repast is before us, or because the custom is to serve three meals a day; if we should consult our gastric cravings, we would pass up a meal. The stomach is a cruelly abused organ; and it *cannot* be abused with impunity. It should have rest. If we would wait till *hunger* admonishes us that the system needs food, we would be in no danger of abusing our stomachs; on the contrary, we would have better health and all the organs would perform their functions normally. Gourmandizing clogs the liver and kidneys. It is a well known fact that naturally, normally and physiologically the human body is the laboratory of poisons; and only by the activity of the various organs of the body can we escape disease and death. These poisons are eliminated by the kidneys; the liver; the intestines; the lungs and the skin. If a person abuses his body by any form of excess or intemperance, or commits any sins against the laws of health, he is certain to reap the consequences. Science has failed, and must fail, to cure *all* diseases. Therefore, it behooves us to live right, be systematic in our habits, since the health of the individual is the health of the State—every one is an integral part of the whole.

For extraneous causes of disease, which are hard to remove and to prevent, are mosquitoes and flies. It sounds startling to read that careful investigation shows there are 200,000 deaths due to diseases carried by mosquitoes. For proof of this statement, the "Stegomyia Fasciata," or yellow fever insect, was very virulent and caused untold deaths in Cuba and Panama until kerosene was used to prevent their breeding. We have plenty of the pests here, but not the disease carrying kind. If people would use ordinary "coal oil" on standing water we would not be troubled with them.

Another extraneous cause of disease is dust, which may convey, when blown about, dangerous bacteria and micro-organisms, but thanks to our oiled streets both the dust and microbes are gone.

In the treatment of sterility in which pregnancy once existed and was interrupted by abortion, or in the many cases of "one-child sterility," there are a few instances in which overgrown endometrium or retained decidua obstructs the internal opening of the Fallopian tubes and so prevents conception. In such instances, and in cases of hypertrophic or hyperplastic endometritis when inflammation can be absolutely excluded, curettage is indicated.

ABSTRACTS

RENAL TUBERCULOSIS, ITS DIAGNOSTIC DIFFICULTIES AND SURGICAL PROBLEMS.—Dr. Filip Kreissl (*Kentucky Medical Journal*) refers to a very interesting paper on the "Ultimate Results of Nephrectomy for Renal Tuberculosis" by Dr. James Israel and such men as Garre, Heresco, Legueu, Pousson, Rafin, Rovsing, Zuckerkandl and others from 1892 to 1912. Some of his conclusions were as follows:

DIVIDING THE CASES INTO GROUPS:

1. Early deaths—within 6 months after the operation.

2. Late deaths—beyond 6 months up to 16 years after the operation, it appears that of the deaths of the first period, 26 per cent. were due to acute general miliary tuberculosis and tuberculosis of the meninges, 15 per cent of tuberculosis of the respiratory organs, and 21 per cent to renal lesions.

Of the deaths of the second period, 13 per cent were caused by acute miliary tuberculosis, 43 per cent. by tuberculosis of the respiratory organs, and 40 per cent. by renal lesions.

After the second year there was a decided and steady decrease in the postoperative mortality. While over 54 per cent. of all far deaths occurred in the period between six months and two years, there was only a mortality of 31 per cent. between the second and the sixth year, and of 14 per cent. from the sixth to the sixteenth year. Of miliary tuberculosis, 63 per cent. died in the first period, and 37 per cent. in the following 16 years.

The higher mortality rate of the first period might have been at least partly due to a faulty technique, to contamination of the wound-bed during the operation, and rapid spreading of the infection over a large area.

Among the 57 fatalities from pulmonary tuberculosis, 42 were known to be present before the operation, but it is well to presume that these figures are too low. Small areas of inactive apex infiltration accompanying renal tuberculosis do escape discovery by our methods of clinical examination. That we surgeons also are sometimes guilty of a superficial examination should be admitted. As soon as we are reasonably certain of the diagnosis, "Unilateral Renal Tuberculosis," we rush the patient to the hospital for fear that the other kidney or the lungs might become involved, instead of first ascertaining if they are not already involved. Sometimes we do not even take the trouble to search for other foci in the rest of the urogenital tract.

It further appears from the above tables that the *death rate from renal lesions* was twice as large in the second period after operation as in the first, leaving the question open:

"Did the remaining kidney become diseased after removal of its mate, or was it diseased before the operation but remained unrecognized because our diagnostic methods were not sufficiently refined to discover the incipient lesion?"

Let us inquire into the nature of these fatally terminating renal lesions.

The total percentage of far deaths from these lesions was approximately 40 per cent. which divided in two groups—tubercular and non-tubercular—showed one-third of them having been non-tubercular, most of them being of the nephritic type.

This type we assume to be caused by the toxins originating in the tubercular kidney, which as experience has taught us, oftentimes subsides after the surgical elimination of its source. When this recovery does not occur, I believe that these lesions were too far advanced to undergo involution or that some of them were cases of another type of nephritis upon which tuberculosis became engrafted. This is merely my personal opinion, no further information being obtainable from Israel's statistics.

Much higher is the death rate from *renal tuberculosis*—60 per cent. and it is of great interest to learn that in 32 far deaths due to tuberculosis of the remaining kidney, its existence was known at the time of the operation.

From this exhaustive and carefully compiled report, it appeared that the permanent results after such a formidable operation as nephrectomy were rather disappointing.

While conditions have changed to the better since then, they are still far from being really satisfactory and I consider it, therefore, not untimely to inquire into some of the underlying causes.

We all are agreed at the present time that renal tuberculosis is as a rule unilateral at

first. Clearly then we may expect the best and most lasting results from early and radical measures, which will prevent the spreading of the disease along the urinary and genital tract or to other parts of the body. An early diagnosis of the condition is therefore imperative, but unfortunately we are greatly handicapped in our endeavor for several reasons.

First. Because renal tuberculosis, the type which is the subject of this address, is an extremely chronic disease, the early symptoms of which are usually so indistinct and appear in such long intervals that they fail to arouse the attention of the patient.

Second. Because many of its symptoms are also associated with other minor and major derangements in the urogenital tract, and when treated as such, seem to subside at least for a while, thus brushing away any suspicion as to the real trouble which might have entered our mind.

Third. Not infrequently the disease is preceded by a chronic gonorrheal cystitis the symptoms of which blend with those ushering in tuberculosis.

Fourth. The medical man in whose hands most of these cases are drifting in the beginning fails to recognize the condition before advanced lesions have set in. I admit the partial truth of this, but in this he is sharing the honors with the surgeon, the gynecologist and the urologist. The majority of the general practitioners, acording to my experience, when in doubt "consult," the other fellow the rule when in doubt—"operate," and this brings me to the main point of my address.

What designates the early and what the advanced stage of renal tuberculosis? Are there any distinct symptoms which would allow to draw the dividing line between the two?

The classical symptoms of renal tuberculosis, pain on the affected side, enlargement of the diseased kidney, albumen, pus, blood and the tubercle bacillus in the urine, fever, night sweats and emaciation are rarely ever cynchronically observed, and if it so happens then they belong to a later far advanced stage of the disease.

The most frequent symptom of the early stage is "hematuria" without a palpable cause occurring in about 5 per cent. It might be insignificant or so profuse as to become alarming. It might be more or less continuous or it might not recur for many months and years. If very profuse it is oftentimes associated with severe renal colic. The persistent miscroscopic finding of red blood cells has been considered as pathognostic of renal tuberculosis, but hematuria of the same type occurs in toxic nephritis, in ordinary varix and other renal lesions which might not be surgical ones.

Albuminurna is thought to be a steady companion of renal tuberculosis in both the early and advanced stage. Contrary to this accepted view, we know it is as a very elusive and independable symptom. Not that I would deny its significance when found, but in the early stage it is usually of an intermittent character requiring many and repeated examinations. Even in the later stages it might be permanently absent. I merely remind you of the cases of complete destruction of the renal parenchyma with substitution of caseous masses and also of the type known as "closed tubercular pyonephrosis" caused by a complete oblitreation of the ureter.

Pyuria—meaning macroscopic pus in the urine—is not a constant nor frequent symptom of the early stage. However, pyuria in the absence of any other pus producing germ, strongly points to tuberculosis. Almost with certainty, we may assume this diagnosis in the presence of urea decomposing germs in an acid fast cloudy urine.

Polyuria and pollakiuria are frequent consorts of incipient renal tuberculosis. Unfortunately its pathognostic significance is oftentimes misinterpreted when the urine happens to be clear.

It is then pronounced as "irritable bladder" —a term without a meaning or as "functional neurosis," or as "reflex neurosis," if incidentally lacerations, malpositions or other lesions are found in the female genitals or pelvic organs.

Nocturnal incontinence in adults or in childhood, after control over the vesical muscles was once established, strongly points to renal tuberculosis. Especially in childhood it is oftentimes the first alarm-signal and should invite a thorough examination.

The coincidence of pyuria and incontinence in the absence of tubercle bacilli in the stained sediment might also induce the diagnosis simple pyelitis. The presence or evidence of past tubercular lesions of the bones, joints, glands and skin should be an important diagnostic aid.

Vesical tenesmus manifest in about 70 per cent. is another symptom which is observed in the earlier stage. It is present even at a time when no visible tubercular lesion in the bladder wall can be found and when the urine is still macroscopically clear. Its origin un-

der these circumstances is explained by some as a renovesical reflex, by others as due to the irritating effect of the toxic urine on the trigone.

Palpation of the kidney in the early stage will be fruitless because a perceptible enlargement of the affected kidney is caused by advanced lesions. Furthermore, in some cases destruction of the parenchyma and its substitution by sclerotic fatty tissue occurs a process which leads to atrophy and reduction of the size of the kidney. Finally we oftentimes find the healthy kidney considerably enlarged as a result of a compensatory hypertrophy. Here I may also mention that the type known as "tubercular fibrous perinephritis" presenting itself as a smooth hard tumor between the loin and the lateral abdominal wall, which on account of its very limited motility might be mistaken for a hepatic or splenic tumor. In those cases the parenchyma is almost completely replaced by abscess cavities and therefore the presence of large quantities of thick greenish pus in the urine should be of assistance in avoiding these diagnostic errors.

The temperature curve is of some value in the early stage. Occasionally in the course of a prolonged observation we find a slight rise of the afternoon temperature, in other cases the latter is normal but the morning readings are subnormal. This taken together with other partly corroborative symptoms, for instance albuminuria or hematuria, I consider good circumstantial evidence of renal tuberculosis, at least sufficient to suspect it and to invite further search in this direction.

Corroborative evidence is only furnished by the proof of the tubercle bacillus in the urine. In the so-called early stage, however, it cannot be demonstrated by the tinctorial process—in more than 1 per cent. to 3 per cent. according to various authors.

Sometimes we have better luck by examining the centrifuged sediment of a 24-hour specimen, but even then we might have to repeat the procedure several times before securing a positive result.

The hypodermic tuberculin test is of distinct value in a group of cases in which we have reason to suspect the condition, yet are unable to find the bacillus by the previous method. We have the body temperature observed every four hours for 24 hours before, and every two hours for 24 hours after the injection. We then begin with 1-2 milligram of diagnostic tuberculin. If there is no reaction to this 1 milligram is given the second day. When positive there is a distinct rise of temperature usually within 8 to 12 hours, and the patient is likely to feel out of sorts for a day or two. It might also set up a focal reaction, pain in the affected kidney, vesical irritation and eventually hematuria. Oftentimes, but not always, tubercle bacilli are found in the urine obtained during this reaction.

The "biological test" is still more accurate and dependable. The inoculation of a guinea pig is said to give 85 per cent positive reactions in tubercular lesions, but some authors think that the susceptibility of the animals to contract tuberculosis in the ordinary way weakens the importance of a positive reaction. Others hold that little importance should be attached to a negative result because a portion of the animals is refractory.

This, together with the fact that it takes six weeks for a definite answer (a dangerously long wait in some instances) made a shortening of this period desirable. At the last German Urological Congress, Meyer reported what he claims to be an infallible biological test, consisting of the combination of inoculation and hypodermic injection of tuberculin. He stated that if a guinea pig be successfully inoculated—hepatic or peritoneal—and 0.5 test tuberculin be hypodermically injected after the 11th to 14th day the temperature of the animal will drop 3 degrees below normal and death will ensue within 12 hours. This typical drop of temperature will also be observed if the animal should survive, but it never occurs if the inoculation was negative. This test, its author claims, proved positive in 99 per cent while control animals treated by inoculation alone reached 45 per cent. only.

From our experience I would suggest not to be satisfied with one negative biological test, where tuberculosis may be reasonably suspected. Since just in the early stage, before tubercular foci have broken through the bacilli are not at all times present in the urine, several repetitions of the test are demanded for more definite conclusions.

Of greatest value is the cystoscopic examination of the bladder and the catheterization of the ureters, but while it enables us in conjunction with the animal experiment to diagnose the condition and locate it in the respective kidney, it does not inform us with certainty of the stage of the disease. On the whole the degree of vesical distress and vesical and ureteral lesions is in direct proportion to the extent of the process in the kidney. But we find sometimes in our operative work the cortex of a kidney studded with tubercles

or several caseous foci in the pyramids, with very little vesical distress and only insignificant typical vesical and ureteral lesions. At other times a single caseous focus in the kidney is causing very painful cystitis and extensive vesical ulcerations.

The diagnosis of renal tuberculosis cannot be considered complete without catheterization of the ureters, nor is it possible to proceed with surgical steps without ascertaining the presence of another kidney, its essential freedom from serious involvement and the degree of its functional activity. But in this endeavor we again meet with doubtful conditions and technical limitations.

Which course are we supposed to take when we recover pus, blood and tubercle bacilli from one kidney, and the bacillus alone from the other? Are we to assume that both kidneys are infected but in a different degree, or should we accept the bacilluria of the latter as a possible attempt of the organism to rid itself of the germs which have entered the circulation from the really diseased side. Those men who are in the habit of exact preoperative examinations and prolonged postoperative observations should be in a position to furnish this most important knowledge, which would shed some light on the high postoperative mortality from renal disease.

The functional tests or renal activity in order to differentiate between essential disease and simple elimination bacilluria are of limited diagnostic value. It is beyond the scope of this address to enumerate them all or to point at their obvious defects. I may suffice to say that they can be utilized to demonstrate the more advanced renal lesions, but for the same purpose we are able to get along just as well with the determination of the total excretion of solids, both with and without artificially produced polyuria.

Having secured our data by all the previously mentioned methods our work is not finished. You gentlemen are surely familiar with the various anomalies and deformities of the upper urinary tract. Some of them are of such a nature that they interfere with our diagnostic and fateful surgical steps. Most of these pitfalls we shall be able to avoid by combining bilateral catheterization with the roentgenogram and pyelography.

I shall endeavor to demonstrate the importance and value of this procedure on two anomalous conditions, both of which have come under my own observation. One of these has been fully described in the textbooks of anatomy, but seems to have received little attention by the surgeons. It is the branching of the ureter, the three more common types of which are:

Type 1. The bifurcation of the ureter occurs outside of the hilum without the formation of a renal pelvis, both branches advancing as calices and terminating in the fornices of the papillæ.

Type 2. One branch, terminating in a small pelvis, the other one forming calices like in type 1.

Type 3. Both branches take part in the formation of a pelvis.

You will readily understand the possibility of tuberculosis being established in that part of the kidney which communicates with one branch only and that a catheter entering the other branch might recover a perfectly normal urine. You will also see the probability of entering the branch of the diseased part and obtaining pathologic urine at another examination done by yourself or somebody else. Imagine the confusion arising from recovering alternately normal and pathologic urine in the course of the same examination, a phenomenon caused by the temporary blocking of the narrow isthmus connecting both branches. Owing to these facts the same kidney may also show large fluctuations of functional value and coloring tests.

Another congenital anomaly is the crossing of one ureter over the spine into the ureter of the other side, or the crossing of both ureters, each running down to the opposite side of the bladder.

In the first instance we might observe changing conditions identical with those presented in the case of branching ureters. In the eventuality of a complete crossing, the reliance upon the result of cystoscopic findings will have the fateful consequence of removing the healthy kidney. Such a disaster can only be avoided by adopting bilateral catheterization combined with radiography as a routine procedure.

By pointing out the fact that cystoscopy can be performed in patients not older than four years and catheterization of the ureter in those not older than six years, I desire to make a special plea for the early recognition of renal tuberculosis in childhood.

Local conditions on the other hand render cystoscopy and catheterization oftentimes a very difficult and sometimes impossible task.

The tuberculous bladder offers more or less resistance to distension with fluids in all stages of the disease. The pain and resistance is frequently so great that it does not

subside even under a general anesthetic. Since no other vesical lesion shows such extreme sensitiveness under the same condition, this may be accepted as pathognostic.

Extensive vesical ulcerations, edema around the ureteral os, ureteral stricture and distortion interfere with the passing of a catheter even in the hands of experts. In such extreme cases we are compelled to resort to extreme measures, not so much for the purpose of diagnosis which then is usually quite clear, but in order to ascertain the condition of the other kidney. We expose the upper part of both ureters and collect the necessary quantity of urine through a small incision.

I have attempted to submit to you the difficulties as they are confronting us in the diagnosis of renal tuberculosis, particularly in the so-called earlier stage; these difficulties are by no means insurmountable if we avail ourselves of all of our present day methods, in the development of which we have made great strides in the last decade. Indeed, if we are looking back over the results of our surgical intervention in this period we can see already the improvement in the percentage of the early and late postoperative mortality compared with Israel's statistics. These we must not forget included all work done in the period from 1892 until 1912, when diagnostic facilities, surgical technique and experience with new methods were not so far advanced.

I hope I have made myself clear that the possibilities of an early diagnosis does not only rest on the appreciation of any one and all symptoms, no matter how slight or how grave they may appear; that the employment of all our present day methods will be of great assistance in many cases, but that repeated examinations at different times will be required in others until the real condition becomes clear or until we should arrive at a point where explorative surgical steps will be justified.

Gentlemen, I am pretty near the end of my address. Allow me but a few words in regard to our therapeutic problems, the solution of which also has some bearing on the fate of those afflicted with this wide-spread disease.

As a matter of fact in the light of our present knowledge of the nature of renal tuberculosis, and taking advantage of the valuable figures of Israel's statistics and of our own experience with various therapeutic methods as they came and passed, there should not be any doubt in our mind as to the proper course to pursue when once the conclusion is reached that the kidney is the site of a tubercular lesion.

In 1898 the much lamented Rosewell Parks of Buffalo expressed himself on this subject as follows:

"Early tubercular lesions of the kidney come under the observation of the physician rather than the surgeon, and require the former's skill rather than that of the latter. They are rarely of a character for which any benefit by surgical interference can be obtained."

Gentlemen, there is a far cry from this then authoritative statement to our present-day attitude. However, the warning voiced by this master of surgery and by others, unquestionably retarded the development of our more efficient therapeutic methods and I venture to say, contributed a goodly share to the post operative "near and far death rate."

It created an unwarranted and harmful temporizing and encouraged the indiscriminate use of tuberculin at any stage of the disease. The more conservative advocates of tuberculin disclaimed its use for what they thought to be advanced cases but advised it in the earlier stage.

In order to fully appreciate the fallacy and inconsistency of this attitude, I again refer you gentlemen to my remarks concerning the not infrequent disproportion of the renal lesion and the manifest subjective symptoms.

The time at my disposal does not permit to remain longer on this subject except to say, that today we know most positively that tuberculin if used in refract doses does not help and if injudiciously pushed to the limit of tolerance causes irreparable damage.

In a series of observations general improvement increased body weight, or the temporary disappearance of the bacillus from the urine may be noticed, but this also occurs in cases which have received no treatment whatsoever, and the latency of symptoms does not denote a cure. Contrary, numerous observations over a longer period demonstrate the progressive character of the disease, which finally demands operative steps at the real late stage. It is regretable that very few surgeons tell us of the condition in which they found such kidneys which had undergone more or less prolonged tuberculin treatment.

The circumstance that single or isolated tubercular lesions are found on operated specimens, promoted the method of partial nephrectomy or resection, which had its conception in the inadequacy of our diagnostic facilities as regards to the other kidney or in

the wrong interpretation drawn from their results. But it was fully demonstrated that even if only one isolated, macroscopically visible lesion was found microscopical foci had invaded the parenchyma along the blood vessels, and therefore no complete eradication from an incomplete method may be expected.

Fortunately the majority of us agree at least in this one point at the present moment, that a permanent cure can only be hoped for by the earliest possible removal of the diseased kidney after the earliest possible diagnosis of tne condition existing therein. We may with certainty look forward to attain this result, if no other tubercular foci be present. But there is where our ways part. Some of us are strongly opposed to nephrectomy if the other kidney shows any degree of tubercular involvement, of ordinary or toxic nephritis, or of impaired renal activity. Advanced vesical ulcerations, manifest foci in the genital tract, in the lungs or elsewhere compose the rest of the objections which are raised.

Based on the foregoing statistics and from an unprejudiced point of view we have to admit that a number of these objections are well founded, but held in this general and sweeping way they are, I believe, too radical.

Before all we know that toxic nephritis of the remaining kidney, resulting from the affection of its diseased mate, subsides after nephrectomy, provided the intoxication has not permanently crippled a larger part of the secreting surface. This we are able to decide by our present methods of functional tests, and we are also able to differentiate this type of nephritis from Bright's disease by the general changes in the circulatory system so characteristic for the latter condition. On the other hand as stated before, the functional tests can only be relied upon if made repeatedly at different times and under different conditions.

It is furthermore our experience that in a small number of cases in which we had recovered otherwise perfectly normal but bacilli-carrying urine before nephrectomy, the bacilli disappeared permanently after the operation. If this postoperative inspection would be generally adopted, we would get more positive information from which to draw our conclusions.

Extensive vesical ulcerations oftentimes point to bilateral kidney involvement, but not always, and in themselves should not constitute a contraindication of nephrectomy. We have seen extensive lesions heal spontaneously after the operation and at other times a few small ulcerations require prolonged postoperative attention.

In the management of the ureter after nephrectomy the extremest views are held. They are varying from the principle of a most complete resection to that of indifference and "let it take care of itself." I have to leave this subject open to discussion, but I may be permitted to say that there are things in surgery that should, but cannot, be done, and others that can but should not be done.

No sane surgeon would hope for a permanent cure in far advanced bilateral renal tuberculosis by any method, but cases have been reported in which the kidney, carrying the minor lesion, recovered completely after extirpation of its mate. Nothing indicates in these reports that successful attempts were made to differentiate between simple bacilluria and the real minor lesion nor on which points the diagnosis of a "minor lesion" rested.

I do not think we would be faithful to our duty to remain inactive if a patient is suffering agonies from all the symptoms of bilateral renal and vesical tuberculosis.

By conservative surgery, unilateral or bilateral nephrectomy, eventual ureterostomy, we can do a good deal to alleviate the torturing cystitis, reduce the consuming septic fever and prolong and make life bearable.

SILICIC ACID IN CANCER AND TUBERCULOSIS.—Kahle (*The Medical Record*) who has studied both the metabolism of silica and the latter's relation to tuberculosis, makes some important announcements with especial reference to the pancreas. 1. There is an intimate association between the pancreas and the silica metabolism of the organism. The metabolism of this acid is changed in the tuberculous and cancerous subjects. In both less of the acid is eliminated by the kidneys than is the rule in health. 2. In the pancreas of tuberculous subjects there is a deficiency of silicic acid. Therefore the patient should not only injest a sufficient quantity of this chemical, but it may also be used to advantage as a local cicatrizant which inclines wounds to heal, but causes granulation tissue to cicatrize. The tuberculous subject should freely injest silicates, etc. In the pancreas of cancerous subjects but little silicic acid is found, and there is no rationale for this deficit. The use of silica preparations in tuberculosis of all kinds lies in the production of new connective tissue which may encapsule the tuberculous lesions and lead to a cicatrization of the latter.

URINARY ANALYSIS IN CHILDREN.—The importance of fairly complete urinary examination in the disorders of infancy is emphasized by R. G. Freeman, New York (*Journal A. M. A.*). The procuring of specimens is difficult and the important facts that could be learned are frequently neglected. The obtaining of specimens notwithstanding its difficulty, especially in female infants, is not really as difficult as supposed. One difficulty is that infants pass a little urine very often, according to Engel, as often as once every 20 or 30 minutes. In a male child a bottle fastened with plaster is usually efficient and in a female child a small cup placed underneath whenever she wakes with a dry diaper, especially if pressure is made over the bladder, will usually procure a specimen. The conditions to be looked for are dilution, evidences of nephritis, of diabetes, of acidity, of acidosis, of intestinal intoxication, and of pyelitis, especially the last three should be constantly looked for. The ordinary means of urinalysis are stated, and Freeman thinks the phenolphthalein test is preferable to trusting to litmus paper alone. Acetone and diacetic acid are only two of the products of acidosis. Betaoxybutyric acid, a third and earlier form of acidosis, is more difficult to test for and of less consequence. While other substances give evidence of intestinal intoxication indican and phenol fairly represent the class and with the test for bile, if necessary, and microscopic examination of urinary sediment are, Freeman thinks, sufficient for routine work. It is not uncommon in children of three or four years of age who take very little milk or other fluid to find a urine of high specific gravity. The presence of albumin is not necessarily a source of concern unless it occurs in a child with nephritic history or previous acute kidney disorder. The same may be said of hyaline casts. Sugar is rarely found in the urine of children and when found the question of over-indulgence in sugar must be considered. Persistence of sugar in the normally fed child, however, is a grave indication, as diabetes in these young patients is almost universally fatal. Acidity of the urine, unaccompanied with the products indicating acidosis, may cause such symptoms as intertrigo and frequent urination which are relieved by alkalies. By acidosis Freeman understands a considerable amount of acetone and diacetic acid in the urine and these substances should be suspected and looked for if it is markedly acid. A diagnosis can often be made by the odor of acetone in the breath but this is not always present. In very early life acidosis is sometimes met with in breast-fed babies who are taking more than they can digest. They have frequent stools that are markedly acid, and may cause intertrigo and even general eczema. It is well to weigh the baby before and after feeding to ascertain whether it is getting too much or not. Most attacks of vomiting in children are accompaniments of acidosis when not due to an overloaded stomach. There is another class of cases called intestinal intoxication which may or may not be associated with acidosis. Such attacks are characterized by indican and phenol in the urine. One of the earliest signs of this condition is seen in marasmic babies during the first months of life who begin to show gain in weight and on examination are found to be edematous in their hands and feet. These are often severe cases and may be fatal, and the stimulating cause may be too much salt. Another group are those who have urticaria and localized edema. If with these the child vomits we usually find an acidosis associated with the intestinal toxemia. Urine examination is important in eliminating a diagnosis of a much more serious condition. The treatment of these cases is free elimination from the bowels and the use of mild alkalies, carefully controlled by the acid tests. The third condition to be looked for is pyelitis and the diagnosis is made by finding in the precipitate of a centrifugalized specimen of urine a material number of leukocytes. One or two in a female baby does not indicate pyelitis but the same number in a male or more than that in a female are suspicious. The pyelitis of infancy is an acute infection which may not be accompanied with fever but should be promptly treated before it goes on to a suppurative process in the kidneys. There is usually a remittent temperature, and in severe cases it may reach 105° or 106° F. It occurs usually at the end of the first year and more often in female children than in males. It is likely to be preceded by a disturbance of the bowels, though usually not an acute colitis. The reaction to treatment varies considerably. Sometimes alkalies are sufficient. Hexamethylenamin is an absolute antiseptic for certain urinary infections but, like the coal tar derivatives, should be used with caution. In conclusion Freeman says: "In every urinary analysis in children, whether with fever or without, careful tests for acidity, for acidosis and intestinal intoxication should be made, and also an accurate computation of the number

of leukocytes present. Should these leukocytes be constantly present in any considerably increased amount an examination for bacteria in a fresh specimen procured in such a manner as to avoid contamination or drawn by a catheter, should be made and if present should be grown on culture mediums for identification. By neglecting to make these tests many failures to properly diagnose and promptly cure disorders in childhood may occur."

HUMAN HEALTH AND THE FOOT-AND-MOUTH DISEASE.—The anxiety that has been expressed in several quarters in regard to the effect upon human health of the present outbreak of the foot-and-mouth disease is regarded by Government authorities as somewhat exaggerated. The most common fear is that the milk supply might become contaminated, but in view of the precautions that the local authorities in the infected areas are very generally taking, there is comparatively little danger of this. Milk from infected farms is not permitted to be shipped at all. The only danger is, therefore, that before the disease has manifested itself some infected milk might reach the market. For this reason, experts in the U. S. Department of Agriculture recommend pasteurization. As a matter of fact, however, pasteurization is recommended by the Department anyway for all milk that is not very high grade and from tuberculin tested cows.

It has been demonstrated by experiments which have been made in Denmark and Germany that pasteurization will serve as a safeguard against contagion from the foot-and-mouth disease just as readily as it does against typhoid fever, but in any event it must be thoroughly done—the milk must be heated to 145 degrees Fahrenheit and held at this temperature for 30 minutes.

In this country the foot-and-mouth disease has been so rare that there are few recorded cases of its transmission to human beings. In 1902 a few cases were reported in New England, and in 1908 in a few instances eruptions were found in the mouths of children which were believed to have been caused by contaminated milk. In both of these outbreaks the sale of milk was stopped as soon as the disease was found among the cattle. As long, therefore, as the disease can be confined by rigid quarantine to certain specified areas the danger from this source is very small. Should the pestilence spread all over this country and become as general as it has been at various times in large areas in Europe, the problem would become more serious. Under any circumstances, however, pasteurization would be an efficient remedy. Where pasteurization is not possible, and where there is any reason to suspect that the disease may exist, the precaution of boiling milk might be advisable. Simple directions for pasteurizing milk at home, however, are contained in Circular 127, which will be sent free on application to the U. S. Department of Agriculture.

Cows affected with the malignant form of the disease lose practically all of their milk. In mild cases, however, the decrease may be from one-third to one-half of the usual yield. The appearance of the milk also changes. It becomes thinner, bluish, and poor in fat. When the udder is affected, the milk frequently contains coagulated fibrin and blood, so that a considerable sediment forms, while the cream is thin and of a dirty color. These changes, however, occur only when the disease is in an advanced stage and, as a matter of fact, the disease is not permitted to pass into an advanced stage, as any stricken animal is at once slaughtered.

Men who come in contact with diseased animals may also become infected. In adult human beings the contagion causes such symptoms as sore mouths, painful swallowing, fever, and occasional eruptions on the hands, finger tips, etc. While causing considerable discomfort, however, the disease is rarely serious. Where it is very prevalent among animals, some authorities believe that it is fairly general among human beings, but that the disturbances it causes are usually so slight that they are not brought to the attention of the family physician. There is, however, a very good reason for everyone giving the diseased animals as wide a berth as possible, namely, that otherwise they may easily carry the disease to perfectly healthy herds. Federal inspectors engaged in the work of eradicating the pestilence are thoroughly equipped with rubber coats, hats, boots and gloves, which may be completely disinfected; and others who lack this equipment are strongly urged not to allow their curiosity to induce them to become a menace to their own and their neighbors' property.

The disease, in short, is dangerous because of the loss that it occasions to property, and not because of its effects upon the health of mankind. At present all infected herds are

being slaughtered as soon as they are discovered, the carcasses buried, and the premises thoroughly disinfected. Until all danger of infection has been removed in this way, the local authorities quarantine the milk.

Those who wish additional precautions are recommended to use pasteurized milk, but as has already been said, this recommendation holds true whether or not there is any fear of the foot-and-mouth disease.

EXPERIMENTAL SURGERY OF THE HEART, LUNG AND TRACHEA.—A. Werelius, Chicago, (*Journal A. M. A.*), after giving brief notices of the literature of intrathoracic surgery reports his own experiments. He first says that in thoracic work the most rigid asepsis is required and he gives his technic in detail. For artificial respiration he and his assistant used a simple home-made affair consisting of an arrangement of two automobile pumps. One hundred and twenty cats were used, including those employed for the development of technic. Complete excision of the pericardium was done in order to study the clinical findings and the extent of adhesions following. The animals acted as before operation and there were no auscultatory symptoms. One cat was kept for six months and when killed was in splendid condition. The adhesions found were mainly to the mobile lung which explains the lack of symptoms. Repair of pericardial defects might be necessary after mediastinal operations. The sac cannot be drawn together with sutures as the heart will not stand the compression. In two cats they used lipofascial flaps from the chest wall and in a few they replaced the excised heart sacs by a piece of omentum but not very successfully, as most of the cats died and all suffered more than any others used. There is great danger of the transplant not thriving and close adhesions form around the heart and to the surrounding lung. In experiments on the heart they used a longitudinal straight cut. Too great traction is dangerous and the heart must be drawn forward very carefully. Hemostassi is the first problem in intracardiac work. They used an ordinary bowel clamp without clasp, using just enough pressure to produce hemostasis. In applying clamps one should avoid the area about the juncture of the upper and middle third of the anterior longitudinal sinus, irritation of which may cause acute dilatation of the heart. Another dangerous region is at the junction of the right auricle and the vena cava. In excising the ventricles it is advisable to avoid the coronary vessels and they made a straight, clean cut. Almost the entire ventricle may be laid open. They used a continuous fine silk suture. If, after the operation, the heart acts badly they found it fatal to suture the pericardium completely. It was astonishing how little immediate reaction was shown. Cats who had their ventricles opened and digitally explored, instruments passed through the orifices and even into the veins, or auricular appendices removed and stab-wounds through and through the heart, have been jumping on and off the tables within an hour after the operations. Surgery of the valves was first suggested by Brunton who suggested it for mitral or tricuspid stenosis. This condition had to be produced experimentally in cats and they attempted to remedy the contracted opening by dilating with ordinary artery forceps. A number of the cats survived and they had to be killed to determine the effects. Excepting in certain areas of the anterior intraventricular groove, puncture wounds of the heart, unless very extensive, cause only temporary disturbances, varying with the type of the insulting agent. Needle punctures caused only momentary increase of the heart's action. In knife stab-wounds the disturbance is rather more serious but it is remarkable to what extent the heart can be damaged, under aseptic conditions. In a cat the auricle appendix is of considerable size. Excision of the left auricle appendix seemed least disturbing. After the excision of both appendices no cat lived over three weeks but Werelius thinks that if he had used more cats he could have saved some. The effects of heat and cold were tested; ice on the heart slowed the pulse and increased its strength. It took thirty-five minutes of intermittent and finally constant application to stop the heart. Excessive heat caused at first violent beating and then weak rapid action. In unilateral lung resection the principal difficulty is the closure of the cut-off bronchi and probably the best method is that devised by Willy Myer who treats the bronchial stump something like the cut of an appendix. In his work Werelius has found that in young cats a lungless side collapsed very quickly. In older animals the changes come on more slowly. A number of experiments were performed which are briefly described. So far as Werelius knows his experiments are the first made on resection of the trachea. Out of twenty-five operations he succeeded in saving only one cat. The

shock is much greater and the death-rate much higher. His summary is given as follows: "The death-rate in the heart work was 38 per cent.; in the lung research 50 per cent., and in the tracheal experimentation we succeeded in saving only one out of twenty-five. Cats without heart-sac show very little, if any, disturbance. If at the end of an operation on the heart the organ is acting poorly it is almost always fatal to suture the heart-sac. The making of a new heart-sac from transplanted tissue is not very promising. Opening in pericardium should not be made too near the base of the heart, as sewing it may cause too much traction on vessels and incidentally on important centers. Extreme traction on the heart is one of the greatest dangers in heart surgery. Through and through aseptic puncture wounds, unless through certain danger regions create only a temporary disturbance, varying, of course, with the type of the insulting agent and the extent of the damage. Auscultatory findings were few in the operated cat heart. The marvelous recuperative power of the heart is demonstrated by the recovery from multiple extensive operations on the organ. The local atelectasis produced by pressure from sponges should be remedied by forcible expansion of lung before closing the chest. The collapse of the chest wall in unilateral excision of the lungs is somewhat counteracted by mediastinal removal. Certain contractile movements of the trachea are observed in excessive expiratory efforts. In section and suture of the intrathoracic trachea a number of animals die from respiratory failure."

CAVERNOUS SINUS THROMBOSIS—CASE REPORT AND SURGICAL STUDY.*—Dr. T. R. Pooley, in the *New York State Journal of Medicine,* recently said, that while thrombosis of the cavernous sinus lies on the border line of the domain of the oto-rhinologist and ophthalmologist, and is, perhaps, more often found to occur in diseases of the nose and accessory sinuses than in inflammation of the orbit, resulting in thrombosis of the orbital veins and extension from there to the cavernous sinus, on the other hand, the symptoms are more pronounced and distinctive in the eye and consequently fall largely under the observation of the ophthalmic surgeon.

Causes.—The triangular shape of the sinus is said to favor the occurrence of thrombosis (*Marfan; Traite maladies de l'enfance,* iv.) by increasing the functional resistance. The walls, constructed of fibrous tissue, are rigid, and the dense bands of fibrous tissue which pass from one wall to the other seem to prevent the collapse of the sinus, and in themselves offer resistance to the blood current. Furthermore, the horizontal decubitus in long-standing diseases, together with depression of the heart action, diminish the force of the blood stream and thus proves an important factor in causing thrombosis. It is desirable to differentiate whether the source of the infection be intra- or extra-cranial, whether from extension from other cerebral sources or by extension from extra-cranial causes. Non-infective thrombosis is rare, but four cases are reported from injury without involving the skull, and one at least from sarcoma, which will be reported in detail.

Septic thrombosis of the cavernous sinus may arise as the result of any infected lesion in the area drained by the ophthalmic vein or its branches, for example, pustules on the face, nostrils or eyelids, and from purulent affections of the accessory sinuses, retropharyngitis and from erysipelas and wounds. As to the order in which these causes contribute there is considerable variance of opinion. Dwight and Germain (*Boston Medical and Surgical Journal,* May, 1902) have collected 182 cases reported in literature, to which Jackson (*Ophthalmic Review, 27,* p. 203) has added 28. In this total of 210 cases the source of infection was in the region of the face in thirty-nine instances, approximately 20 per cent and was second only to sinus disease in the causation of sinus thrombosis.

St. Clair Thomson (*Ophthalmic Review,* 1908, *27,* p. 293) thinks that the proximate and much more probable source of sepsis has been overlooked. The source of infection is frequently attributed to some lesion of the upper eyelid, carious tooth or phlegmon of the face and neck, when the much more probable one in the accessory cavities of the nose has been overlooked and the value of the statistics of Dwight and Germain is greatly diminished by the absence in nearly all cases of clinical or post-mortem examination of the accessory nasal sinuses.

Next to diseases in the sphenoidal sinuses Thomson puts pyogenic infection from the ear and places third in frequency the cases where the infection is carried by the ophthalmic vein and its branches; and last infection through the pterygoid plexus. After an anatomical review of the paths which infection can follow, Thomson reaches the conclusion

that the most common cause of thrombosis of the cavernous sinus is disease of the sphenoidal sinus. He has given full proof of this in one published case with post-mortem (*Trans. of the Medical Society of London*, 1906, xxix), and has collected particulars of sixteen others with post-mortem confirmation in all instances.

That apparently trivial lesions in the region of the face and eyelids may cause infections of the sinus is amply shown by two recent cases. Dr. A. C. Snell (*Trans. Am. Oph. Soc.*, 1913), reports one from a small lesion of the skin of the temple, and Simeon Snell reports one from a still more trivial lesion caused by the prick of a pin (*Trans. Oph. United Kingdom*, xxvi). In the majority of cases both eyes are affected, the thrombosis extending from one sinus to the other. Dwight and Germain (loc. cit.) in 134 autopsies found only thirty in which thrombosis was limited to one sinus. In sixty-five cases both sides were affected and in twenty-eight other sinuses were also involved.

The symptoms are well known, but nevertheless it may not be out of place to enumerate them, as they may serve as a guide to the operation. Needless to say the point from which the infection starts may serve to indicate the part which will be involved, whether it be the anterior or the posterior end, an important point in deciding upon operation. There may be co-existing meningitis, pyrogenic temperature, rapid pulse, profuse sweating, rigors, headache, nausea, hebitude, delirium, coma, convulsions, involvement of the cervical glands, swelling of the palate or cheek, but generally the possibility of thrombosis of the cavernous sinus is first suggested by the condition of the eyes, which are proptosis, œdema of the eyelids, chemosis, haziness and anæthesia of the cornea, partial or complete ophthalmoplegia (gradual involvement of the third, fourth and sixth nerve), engorgement of the retinal veins, rarely neuroretinitis. There may be, too, as in my case, ædema of the mastoid region.

All of these symptoms may be present, but it will depend largely upon whether the thrombosis extends forward from the posterior part of the sinus or originates in the ophthalmic vein and spreads backward.

Diagnosis.—There are some points to be borne in mind before settling definitely upon the diagnosis of cavernous sinus thrombosis. Frazier (*Posey and Spiller's Diseases of the Eye and Nervous Diseases*) says, first of all, that the obstruction of the circulation in both the cavernous sinuses and ophthalmic vein is not necessarily due to thrombo-phlebitis. The pressure of a tumor in the orbit or sella-turcia, or artero-venous aneurism of the carotid artery, may so interfere with the venous circulation as to simulate thrombosis. Cellulitis of the orbit and phlebitis of the ophthalmic vein may produce a like result, but in case of tumor, absence of fever and gradual onset serve to form a diagnosis. In the absence of any central phenomena, however, it is almost impossible to differentiate between a true sinus thrombosis and phlebitis of the ophthalmic vein.* (*Mont. f. Ohren.*, December, 1912, p. 1529). According to these authors compression of both jugular veins is followed at once by a dilatation of the veins in the fundus oculi, as a sign of stasis in the intracranial venous system. Under normal conditions this dilatation disappears again with considerable rapidity as soon as the compression is interrupted, even on only one side. This observation may be advantageously utilized for the diagnosis of sinus thrombosis or thrombosis of the jugular vein, respectively.

Surgical Aspects.—We come now to the consideration of the surgical aspects of cavernous sinus thrombosis, to which I shall devote the rest of this paper. Says Dr. Frazier in an article on this subject (Posey and Spiller on the Eye and Nervous Diseases): "When we consider that only seven in every hundred cases of infective thrombosis of the cavernous sinus recover it would seem that surgeons would have endeavored to enter this field long ago with the hope of reducing the mortality, and yet until recent years no attempt has been made."

The difficulties that at once arise when we consider seriously the surgical aspects and possibilities become manifest. The diagnosis is difficult and in many cases has not been made until metastases have occurred, or the toxaemia is so profound and the thrombosis so extensive as to cause all hope of recovery to disappear. As all otologists know, the principles to be observed in the treatment are recognized fully, and have been applied with constantly increasing success for the relief of thrombosis of the lateral sinus. If the cavernous sinus could be reached, operated upon and drained with as much ease and safety as the lateral sinus the results would be as good in the one as in the other.

That the pessimistic views regarding any operative interference in thrombosis of the

cavernous sinus express to a very wide extent the opinion of most surgeons, I have found to be corroborated by consulting both general and special books on the subject. Dr. Frazier writes to me that so far as he knows "there have been no operations for the relief of this condition in the surgical clinic of the University Hospital of Pennsylvania, and I do not believe any operations have been done in the Department of Otology under Dr. Randall. Such surgical text-books as I have consulted discountenance the operation."

Even Ballinger (*Diseases of the Nose, Throat, and Ear,* 1911, p. 816), says that "palliative attempts to operate on the sinus usually terminate fatally, although successful cases have been reported."

Gruening (*Am. Opthalmo. Trans.,* 1913, xii, 11), pertinently remarks in the discussion of Dr. Snell's paper: "Inasmuch as the cases of infective thrombosis of the sinus generally end fatally, the way of reaching the sinus and removing the thrombus should be eagerly sought."

In cases in which the cavernous sinus has been involved by extension from the ear through the lateral sinus, attempts have been made to drain the cavernous sinus by opening and curetting the lateral sinus. This operation has been followed by recovery in three reported cases. Cohen-Tervaert (*Klinker Embolisch Geffass,* Berlin), report a case of extension through the ear in which the middle cerebral fossa was opened and several punctures in the direction of the cavernous sinus were made, but without result. This is only applicable to cases in which the posterior fossa of the sinus is involved.

The sinus may be reached either directly or indirectly, in the latter case, by extending the operation made upon the lateral to the cavernous sinus. Operations upon the lateral sinus have apparently, in a few cases, relieved the cavernous sinus, but generally fail, and must do so if the thrombosis is a primary one or is placed well forward; but in cases where the posterior end of the sinus is primarily and directly infected from the bone disease which has extended to the apex of the petrous portion, and the infective focus in the sinus is directly continuous with that in the bone, or in other cases in which the infection reaches the cavernous sinus by way of a connecting sinus, they may be successful. Bircher (*Centralbl. f. Chir.,* 1893, xxii), reports a successful case.

Levinger (*Munch. Zeit. f. Ohren.,* 1912, xiv), has recently recommended enucleation of the eye and contents of the orbit, and resection of the posterior bony inner wall of the orbit up to the optic foramen. This method allows of the exposure of the inner and lower wall after a further removal of the bone has been done, *i. e.,* resection of the outer and anterior border of the sphenoidal sinus, but so far as the writer knows it has not been done; and if it were, only the anterior part of the sinus could be reached by such a plan.

The credit for the first attempt to directly expose the sinus cavity and remove the thrombus belong to Dwight of Boston (Dwight and Germain: "Thrombosis of the Cavernous Sinus; Four Cases, Including One Cranial Operation." *Boston Medical and Surgical Journal,* January, 1900, clvi. No. 18. p. 147). A horseshoe incision, apex upward, was made in the temporal region, including the temporal muscle, which was turned down, its anterior edge being two and a half inches back of the outer canthus. The flap was carried as low down as possible without removal of the zygoma, being practically the one recommended by Krause in his operation for intracranial resection of the trigeminus. The temporal bone was trephined as low as possible, and the opening enlarged with a rongeur. The dura was opened, the top of the temporal lobe lifted backward and upward, until the cavernous sinus was felt with the tip of the index finger of the left hand. A narrow bistoury with protective edges was carried along the finger, and the cavernous sinus opened by an incision one and a half inches long. This incision was followed by a rush of dark, semi-clotted blood. The knife was then withdrawn, a narrow slip of gauze was introduced along the finger which had been kept in place, and the finger was then withdrawn; the gauze which had been left in place entirely controlled the hemorrhage. The dura was brought together, the edges of the skin approximated by interrupted sutures, and the gauze which had been introduced was carried through the flap. There was temporary improvement after the operation. The temperature dropped from 103 degrees to 101 degrees, and the pulse dropped twenty beats; at the end of half an hour the exophthalmos had also disappeared to a great extent. The chemosis and œdema of the lids remained about the same for six and a half hours, and then the patient died.

One month later, Dr. Frank Hartley operated on a patient of Dr. Knapp's (case of traumatic orbital sarcoma, followed by a sep-

tic thrombosis of the cavernous sinus). The operation was done at the request of Dr. Knapp, to clear out a sinus which he supposed to be obliterated by a non-infective thrombosis, and to prevent the thrombus from extending to the sinus of the other side by ligating or compressing with a tampon the circular sinus. The operation was done March 1, 1900, and is thus described by Hartley: "A horseshoe incision was made over the temporal region and extended as in the operation for extirpating the Gasserian ganglion. The periosteum was divided in the line of the incision, and the bone removed. The osteoplastic flap thus formed was raised and reflected over the zygoma, the dura loosened from the zygoma and petrous portion of the temporal bone sufficiently to recognize the second and third divisions of the fifth nerve, and the middle meningeal artery at its entrance into the middle fossa,—but the artery itself was not divided; its distal end was managed by compression beneath the brain by a retractor, while its proximal end was plugged with catgut in the foramen for its passage through the sphenoidal bone. At this stage, the dura was incised just below the cavity of Meckel's space, enclosing the Gasserian ganglion. (This should not be done in septic cases.) The tip of the temporal lobe was then lifted upwards. The escape of cerebro-spinal fluid allowed a greater field for operation, but made the retraction of the brain more difficult to carry out. The sinus was now located in front of the junction of the second and third division of the fifth nerve, and incised longitudinally. No hemorrhage took place at this time, since the lumen of the vein was occupied by a clot which filled it and which was with difficulty removed. In incising this portion of the sinus wall the division of the third and fourth ophthalmic branch of the fifth nerve was seen. The artery was not regarded, as it had already shown evidences of paralysis. After the removal of the clot in this portion of the sinus a probe was passed into the sinus beneath the fifth nerve toward the petrosal sinus. When this part was located the incision into the cavernous sinus was extended and the remaining clot removed. The entrance of the superior petrosal, which at first did not bleed, was seen. After the entire removal of the clot from the cavernous sinus the circular and petrosal sinuses were carefully probed; from these sinuses blood soon flowed, which was accepted as satisfactory evidence of their permeability. The walls of the sinus were then allowed to drop together, and a small strip of gauze was placed against the entrance of the circular sinus. The end of this piece of gauze was brought out through the lower angle of the wound; there was no hemorrhage. The osteoplastic flap was replaced and sutured, but in such a manner that the gauze could be easily removed without disturbing the flap. The patient died of septicæmia forty-seven days after the operation."

Knapp says that this method can be carried out not only in the rare cases of non-infective thrombosis, but also in the cases of infective autogenous thrombosis.

Ballance (*Internat. Cong. Otol.*, Boston, August 12, 1912) reports a case of "Septic thrombosis of the left sigmoid, left cavernous and left petrosal sinuses, with suggestions for treatment in future cases." The patient was a boy upon whom a complete mastoid had been done. The sigmoid sinus was exposed and found to be thrombotic; the jugular and its branches were tied. Eight days later symptoms of thrombosis of the left cavernous sinus developed. At operation on the same day the sinus was exposed by the Hartley-Krause incision. No hemorrhage. Incision into the same of about one inch gave exit to a blood clot, and this was followed by pus from the posterior end of the incision. After irrigating with peroxide a tube was passed into the sinus and fixed there. Attention was then given to the wound made behind the ear at the previous operation. It was found that the dura in front of the vertical portion of sinus was gangrenous throughout its entire thickness, and from the upper inner part a little pus mixed with blood was oozing from an opening in the sloughing dura. This opening was enlarged and dead bone removed when a meningeo-cerebral abscess came into view. The patient died in the afternoon. Post-mortem showed all the sinuses in the upper segment of the left jugular free from clots, except the left lateral toward the torcular. The left cavernous sinus was empty except in its posterior portion, where a little pus was seen.

For approaching the cavernous sinus in such cases Ballance had adopted the Hartley-Krause method, with the addition of a recommendation made by Voss—the cutting away of the zygoma and removal of bone from the basal aspect of the skull for better drainage (*Centralbl. f. Chir.*, 1893, xxii).

Haasler and Burger (*Arch. Otol.*, 1896, p. 365), while recommending that the Krause method of incision be used, say that it has not been followed by success.

Concluding Remarks.—From a resumé of

the four cases in which operations for the relief of thrombosis of the cavernous sinus have been reported, the inference to be drawn, in spite of the fact of such poor results, is that there is no need for such a pessimistic view as seems generally entertained. Leaving out the procedures applicable to secondary and direct implication of the sinus that occur in ear disease where there is an extension from diseased bone of the lateral sinus by which the cavernous sinus may be reached, we should attempt as soon as the eye symptoms occur a direct attack upon the sinus by the method recommended by Dwight and Hartley, *i. e.*, the Krause incision. Other methods which have been attempted should be discarded, as they are useless and permit the removal of only an anterior part of the thrombus.

When we consider that in the cases so far reported, with the exception of Knapp's, there was serious involvement of the other sinuses, and that sepsis had already existed, the reason for the lack of success is apparent. In Knapp's case, however, that notwithstanding the existence of malignant disease as well as the thrombosis, it is encouraging to remember that the patient lived for six weeks.

The difficulties which environ the operation have already been considered, and we have now only to decide what is the best method of operating, and by cultivating it we shall change the now almost certain mortality to some degree of success. It is true that the operation is more difficult and the conditions which indicate the necessity for it are harder to decide upon than in thrombosis of the lateral sinus, yet the mortality in this latter operation was much greater before it was so uniformly performed and the technique so greatly improved. One of the difficulties in operative procedure on cavernous sinus thrombosis is in making the diagnosis soon enough. The distinctive points, the extreme tortuosity of the retinal vessels and the œdema of the mastoid may be wanting, and consequently it may be impossible to make the diagnosis in time to render the operation successful. One point in diagnosis to which I have alluded under "Diagnosis," the compression of the jugular veins, may here very well come into play. No efforts should be omitted to make an early diagnosis, therefore, for a successful issue will depend upon the performance of the operation before the infection extends to the other sinuses through the circular and transverse sinuses; the meninges also are likely to become affected.

The lessons to be learned from the cases herewith reported are: (1) that the cavernous sinus is not beyond the realm of the surgeon's knife; (2) that an incision on one side will suffice to drain the other, and that although both sinuses may be involved the operation is not contra-indicated; (3) all operators are in favor of the osteoplastic method, not only in the rare cases of aseptic thrombosis, but also in the infective, autogenous thromboses.

In describing the technique of the operation three points are to be considered:

1. The sinus will be found to be most approachable from the temporal side, and the opening in the skull may correspond precisely with the one which would be made for the exposure of the Gasserian ganglion.

2. The difference in the two operations consists essentially in this: that in exposing the ganglia the operation is extra-dural; whereas, in the exposure of the sinus it is almost imperative to make a dural incision and to approach the sinus in this space between the base of the brain and the dura. Incision in the dura should be made on a level with the base of the skull, the brain elevated, and once the sinus is reached it should be opened and the thrombus thoroughly removed with a curette.

3. It is most important that the seat of the thrombus should be thoroughly drained. Hartley's operation demonstrated that it may be done without grave danger to the patient, provided he be in fairly good condition, as shown by the fact that the patient lived for several weeks, dying of the original disease, sarcoma.

Dwight showed that an incision in one sinus instantly relieved the circulation in both and that such an operation can be done without much difficulty, is not associated with any degree of shock, can be done under almost primary anæthesia, finished in a few minutes, and that hemorrhage is easily controlled.

My plea, then, is that these operations justify the belief that thrombosis of the cavernous sinus is distinctly an operable condition, and that it holds out the hope that its acceptance may be followed by a decrease in the present excessive mortality in this serious condition.

THE NEGLECT OF LABORATORY AIDS TO DIAGNOSIS.—Dr. David Wilson, in an interesting paper read before the meeting of the Fourth District Branch of the Medical Society of the State of New York, said that

younger members of the profession are sometimes criticised by the older contributors to the medical magazines for placing too much reliance on laboratory methods to the neglect of physical diagnosis. It should be insisted that the use of laboratory aids to diagnosis will not excuse any one for being less careful in physical examination. Some of the best diagnosticians have spoken slightingly of laboratory work. No doubt they, by their superior skill, may make diagnoses in some cases without laboratory aids, but those less skillful cannot do without such aids. Laboratory tests and physical examination should go hand in hand in all obscure cases. The man who decries laboratory work is making about as big a mistake as the man who is slipshod in physical examination because of his confidence in laboratory work. Since the best diagnosticians make mistakes in diagnosis, nobody can afford to neglect any method, either of physical examination or of the laboratory, which will help to make a diagnosis more sure.

Laboratory work is most valuable to the physician who does his own laboratory work, because he can interpret the results much better when he has seen them himself. The laboratory man cannot always interpret the results well without knowing the clinical history. If the physician is too busy to do his own laboratory work he should know enough about it at least to understand what to expect from the laboratory and how to interpret the laboratory reports. Many times laboratory workers are asked to do the impossible by men who ought to know what is possible. Most of the fault finding with laboratory work is from those who know little or nothing about it. Judgment based upon knowledge is necessary to determine when laboratory tests are indicated. In emergencies do not delay measures to relieve suffering or prolong life while waiting for laboratory reports.

Other instances in which wrong diagnoses were made as the result of neglect of laboratory aid were cases of pyelitis treated for malaria and sepsis treated for typhoid fever; but enough has already been said, I think, to prove that there is a neglect of laboratory work. Let us consider some of the simplest and most useful laboratory tests which many physicians are neglecting, and then consider the reasons for such neglect.

The amount of laboratory work which a majority of physicians perform may be summed up as the examination of urine for albumin and sugar. In urine examination they ought to pay more attention to the amount passed, to the specific gravity and to the microscopic examination of the. urine. The presence of bile and a rough estimate of the amount of indican are easily determined. Much difference of opinion has existed as to the value of urea determination, and personally I feel that it can be neglected better than many other parts of laboratory work, although it shows whether the amount of urea is proportional to the specific gravity. I still believe in the diazo reaction as an aid in the diagnosis of typhoid fever, although I have found it in other diseases. As a rule, there is no difficulty in diagnosing typhoid from other diseases in which the diazo reaction may be found, except in some cases of tuberculosis. In examining for the diazo reaction be sure the urine is fresh. I have found it present in urines just voided and been unable to find it in the same urines after standing a few hours or over night. No one will find fault with the general practitioner for neglecting the determination of the amount of chlorides, of the total nitrogen or of the ammonia nitrogen. These tests are of more prognostic than diagnostic value. The tests of Roundtree and Gerachty are probably the best renal functional tests, but they are hardly to be considered laboratory tests.

Most of the important facts to be derived from feces examination can be learned in a few minutes and without complicated apparatus. The chief reason for its neglect is the disgust which the thought of it arouses. If the feces are sent to the laboratory in a tightly sealed fruit can and a little 10 per cent formaldehyde solution is mixed with the stool before the examination there is practically no disagreeable odor. The presence of the formaldehyde does not interfere with any of the tests except the search for amebæ coli, which are best recognized alive. The presence of undigested muscle fibers, of starch or fat, fatty acids and soaps is easily determined. The benzidine test for blood is simply and quickly performed. Since so many people are now traveling in tropical and sub-tropical countries the examination of feces for the ova of parasites is becoming more important.

In gastric analysis usually more is to be learned from the examination of fasting contents than from the results of a test meal, although both should be used. Few physicians employ gastric analysis, but I have found it valuable in a number of cases. It should be used in cases which fail to find relief by the usual remedies and whenever dilatation or cancer is suspected. After removal of the

test meal and while the tube is still in the stomach the capacity and position of the stomach can be determined, first, by filling it with water and then by air and percussing the outlines of the stomach.

While something might be said in regard to the examination of sputum for elastic tissue, influenza bacilli and so forth, we shall only call attention to the neglect of the profession in regard to the examination for tubercle bacilli. It may be admitted that tubercle bacilli may not be found in 50 to 60 per cent of the cases in which a clinical diagnosis of pulmonary tuberculosis is justifiable, but a sputum examination should be made in every case suspected of being tuberculous. Boards of health should require a sputum examination in every case reported as tuberculosis. Very few diagnosticians can be absolutely positive of their diagnosis without finding the tubercle bacilli, since they may mistake an old abscess of the lung, a chronic bronchitis, a neoplasm or even chronic congestion for tuberculosis.

Boards of health everywhere perform sputum examinations, examinations of the throat cultures and Widal tests for typhoid. There is, therefore, less excuse for the neglect of these tests than of others. More throat cultures should be made. Cases of diphtheria pass as tonsillitis, and some families are quarantined for diphtheria which would not be quarantined long if throat cultures were made. Better provision should be made for the examination of throat cultures in villages and small towns. This can be supplied by the establishment of county laboratories.

The Wasserman test is about the only important laboratory test which the general practitioner and the small laboratory cannot perform. This test is so complicated and requires so much time in the preparation and titrating of reagents that it can be performed profitably and satisfactorily only by the larger laboratories

Blood counts are most often valuable for the recognition of suppurative inflammatory processes and for the diagnosis of typhoid fever. Many cases of suppurative inflammation, especially pyelitis, are treated as malaria. In this district the rule never to call a case malaria without finding the parasite should be strictly heeded. Blood examinations should also be made to distinguish between leukemias and Hodgkin's disease and for the recognition of primary and secondary anemias. As blood examinations have become more common the diagnosis of pernicious anemia has become more frequent, and no doubt many cases still go unrecognized. Almost any physician can soon become able to make a careful blood examination in half an hour and a useful one in ten minutes. Blood cultures are not made nearly as frequently as they should be.

During the past few years the examination of cerebro-spinal fluid has grown in importance. The amount of albumin in the fluid, its coagulability, the number and kind of cells present and the presence of bacteria prove the existence of meningitis and the type. The cytological examination of cerebro-spinal fluid is also important in syphilitic lesions of the central nervous system, as is also Noguche's butyric acid test.

Even the gonococcus is neglected. Perhaps it is not necessary for a diagnosis to prove its presence in every case. How seldom physicians attempt to prove its absence before they allow a patient to consider himself cured!

The surgeon, if not the general practitioner, might be expected to know how to preserve specimens for histological examination. Unless otherwise directed by your laboratory, place specimens in 10 per cent formalin solution as soon as possible after removal. How often pathologists are asked to make diagnoses on specimens which have dried in the air for a day!

Why is laboratory work neglected by so many physicians? They don't realize that it is worth the effort necessary to overcome the difficulties in its way. Some may think that the physicians who are neglecting it are the men who graduated twenty or thirty years ago, but many men who graduated only five or ten years ago are neglecting it. The difficulties are the time required, the expense and the natural dislike of laboratory work expressed by many physicians. The physicians with large practices do not have time for laboratory work, but as a rule they are not the ones who are neglecting it. They have the work performed for them. Men with small practices ought to do as much laboratory work themselves as possible. Some patients cannot afford to pay the regular prices for laboratory work. Often the satisfaction of making a diagnosis in an obscure case will be pay enough.

In conclusion, let me urge you not to neglect laboratory work, although I realize that the physicians who need this advice most are the ones who do not attend medical meetings. Laboratory work will not always help to make a diagnosis. It may sometimes make a diagnosis more obscure by presenting unusual phenomena, but it will nearly always add in-

terest to the practice of medicine. You should use some of the leisure time the automobile has given you in your own laboratory work.

SOLUTION FOR RECTAL AND INTRAVENOUS INJECTION.—In practically all clinics the world over, it is the custom, states the *Therapeutic Gazette,* to give after any formidable operation rectal injections, usually of normal salt solution. When there has been hemorrhage or pronounced shock, and the need of promptly increasing blood-pressure is more urgent, the solution is given intravenously. The effect is most beneficial. Thirst is quenched, and the kidneys are stimulated to activity, both directly by the absorption of the fluid and indirectly by a reflex incident to the injection itself. Toxins are eliminated, and the postoperative course of patients thus treated is as a rule much smoother and more comfortable than is the case in which such rectal and intravenous injections are not given. Moreover, the postoperative and post-traumatic mortality has been distinctly lowered.

There are, however, certain dangers connected with the method which are not generally recognized. It is possible by a too continuous and forceful enteroclysis to produce a pronounced edema of the gut; by a too rapid intravenous injection to throw a burden upon the right heart with secondary lung edema which may in itself prove fatal. The large salt content of a copious enteroclysis or venoclysis, 9 pints in twenty-four hours if the physiological solution be used (.75 per cent), is distinctly irritating to the kidneys. Moreover, Schiassi (*La Semaine Médicale,* tome xxx, No. 50, 1913) observed as a consequence of this saline treatment a progressive and at times an irremediable adynamia. He quotes Löb and Osterhout to the effect that normal salt solution occasions an impoverishment of calcium and potassium in the cellular elements, particularly of the nerve tissues, Novy having shown that in the case of calcium a 50-per-cent reduction may be noted. Since calcium exercises a tonic action on the nervous system it is obvious that a diminution of this element accomplished by means of normal salt injections may produce a profound depressor influence. It is because of these considerations that Schiassi has made certain combinations which theoretically and clinically in his hands have shown their great usefulness. In the first place he lessens the quantity of sodium chloride to 650 in place of 750 to the 1,000, and adds a definite quantity of potassium and of calcium. This is not only tonic, but increases the coagulability of the blood. Moreover, since surgical operations are peculiarly prone to develop the initial phenomena of an acidosis, he adds bicarbonate of soda and finally glucose because of its diuretic, tonic, and cardiotonic properties, which are peculiarly inherent in this substance. His formula for intravenous injection is as follows:

Chemically pure chloride of sodium, 6.50;
Chloride of potassium, 0.30;
Chloride of calcium, fused, 1.00;
Bicarbonate of soda, 0.50;
Glucose, 1.50;
Distilled water, 1000.00.

If the solution is for the purpose of rectal instillation, the quantity of glucose is increased from 1½ to 50 grammes and pure ethyl alcohol is added in the proportion of 15 grammes. Schiassi distinctly prefers the rectal method of injection because substances being absorbed by the portal circulation undergo a proper transformation in the liver. Moreover, a greater quantity of liquid cannot be introduced by this route than is actually called for by the needs of the general circulation. As to the ethyl-alcohol, Schiassi has apparently shown that it favors the penetration of the liquid through the intestinal coats and augments its diffusibility.

In some few clinics especial attention is devoted after operation to examination of the urine with the view of detecting an acidosis, diacetic acid, acetone, and oxybutyric acid being often found before the clinical manifestations of this condition become apparent. Since this condition urgently calls for the prompt administration of an alkali the usual routine is to administer by enteroclysis a 2-per-cent sodium carbonate solution. In addition to its diuretic and cardiovascular effects glucose serves well in providing energy to patients profoundly emaciated and weakened by a long standing previous disease. Its rectal administration during the postoperative period when the stomach is non-retentive may under such circumstances prove life-saving. Nor is there any difficulty about its prompt absorption and rapid utilization.

UNITED STATES CHAMBER OF COMMERCE TO STUDY FOOD AND DRUG QUESTIONS.—The Chamber of Commerce of the United States of America, a body composed of representatives from about 600 local boards of

trade, chambers of commerce, and trade associations, widely distributed throughout the United States, has taken up the study of the subject of uniform food and drug regulation. For this purpose a special committee was appointed in July, and its first meeting was held at the headquarters of the Chamber in Washington, October 8th. The committee is composed of Willoughby M. McCormick, of Baltimore, A. J. Porter, of Niagara Falls, John A. Green, of Cleveland, B. L. Murray, of New York, and Theodore F. Witmarsh, of New York. Mr. McCormick, the chairman, is a member of the Board of Directors of the Chamber of Commerce of the United States and the head of the firm of McCormick & Co., manufacturers of extracts and drugs and importers of spices and teas; Mr. Porter is president of the Shredded Wheat Co.; Mr. Green is secretary of the National Association of Retail Grocers; Mr. Murray is chemist to Merck & Co., and Mr. Whitmarsh is vice-president of Francis H. Leggitt & Co.

The first meeting of the Committee was devoted to organization and the preparation of a program for the committee's future work. The following resolution was adopted:

Resolved, That the Chairman be, and he hereby is, authorized and empowered to appoint two sub-committees to consider, respectively, the problems relating more particularly to food control and to drug control, and to report their findings to the general committee.

As a result of the above resolution Mr. McCormick appointed Mr. Murray as chairman of the sub-committee on drug control and Mr. Porter as chairman of the sub-committee on food control.

The following resolution commending the efforts of the Department of Agriculture tending towards co-operation and uniformity was also adopted:

Resolved, That this committee hereby earnestly and heartily endorses the establishment of the bureau in the United States Department of Agriculture, particularly concerned with Federal and State co-operation in the enforcement of the Food and Drug Control Laws, thereby promoting an equal and uniform enforcement of such laws, believing that this work is distinctly in the public interest.

The position taken by the committee on the meaning of uniformity is interesting and will repay close examination. Its views are not confined to a limited horizon, but are intended to grasp the broader and wider fields. Its efforts will be confined to no organization or class of people. It hopes to cover in its endeavors the position of the wholesaler, the retailer, the consumer, the manufacturer, the official, and all others concerned in the production, handling and consumption of food and drugs. But only the broad, general questions of national character will be considered. After a lengthy discussion the committee, at its meeting, by unanimous vote of all present, adopted the following regarding uniformity:

Uniformity, as the committee would define it, involves the highest degree of efficiency in food and drug control which it is possible to have prevail universally and equally in every part of the nation. The Federal, State and Municipal laws and their regulations would, if perfect uniformity were attainable, reach the level of full and complete efficiency—and thereby afford equal protection and a uniform standard of living for all the people. Uniformity accomplished places merit and the general public interest over local, political, or geographical divisions. This committee will, therefore, direct its efforts and consideration toward the accomplishment of uniformity. The committee cannot but feel impressed with the magnitude, the importance and the seriousness of its work. It cannot but feel the need for the closest study of the subject. And again the committee cannot but feel the necessity for the fullest and most cordial co-operation between itself and the officials and all others concerned. The committee will, of necessity, act deliberately and slowly, making certain of each step, considering only the important problems of national character.

Treatment of Nevus With Solid Carbon Dioxide.—Dr. E. A. Smith (*New York Medical Journal*), believes solid carbon dioxide is a valuable addition to our armamentarium for the treatment of nevus, moles, and some other superficial conditions. The application should be made for not more than fifteen seconds in children up to two years old, and for as long as forty-five seconds, or longer, in an adult. Several applications should be made at intervals in extensive cases. No anesthetic is necessary, as the application is comparatively painless, but sometimes the pain during the thawing, and perhaps for some hours afterward is considerable. In the after treatment a drying, mildly antiseptic powder with a pad of aseptic wool is preferable to ointments, under which there is more tendency to ulceration and greater difficulty in maintaining asepsis.

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TREATMENT OF NUTRITIONAL DISORDERS IN INFANCY.

The various investigations which have been made in this country and abroad during the past twenty years, says the *Therapeutic Gazette,* have thrown much light on a class of cases which are often exceedingly difficult to successfully deal with. Since Booker's original investigations, twenty-five years ago, an enormous amount of bacteriological study has filled the journals. At first, the endeavor was to give food which would be less favorable to the growth of these newly-recognized micro-organisms. More recently, not only has this plan been carried out, but it has been proved that in certain types of intestinal disorder in infancy other micro-organisms which are both benign and curative may be employed, with or without food, in bettering the patient.

Furthermore, the large amount of attention that has been paid to the preservation of milk supplies has materially decreased the number of instances in which nutritional disorders in infancy occur. Finally, it is not to be forgotten that the ability of an individual child to digest and assimilate a food, which theoretically leaves nothing to be desired, is a factor which has to be considered in every case. This is true not only of the quality but of the quantity of food which the individual can utilize.

An interesting type of arrested nutrition in infancy is seen in those infants whose stools are not particularly abnormal in appearance although they are often unduly dry, light in color, and of a foul odor, with a consistency resembling damp clay or putty. These stools have sometimes been called "soap stools," owing to the large amount of neutral fat which has been replaced by fatty soaps. The light color of these stools is usually thought to be due to a lack of hepatic secretion, but as a matter of fact it depends upon changes in the bile which result in a colorless product. Such cases are to be treated not by the administration of calomel, although the use of this drug by purging the little patient, may afford temporary relief. The small white masses sometimes seen in such stools are not due to curds formed as casein, but to masses of fatty soaps. The ingredient of the feeding bottle which is to be diminished is therefore not casein but fat, and oftentimes if the milk is considerably diluted, whereby both elements are diminished, and the fats supplanted by the addition of some starchy food, the disordered digestion will be corrected.

In some instances the disorder depends upon the use of too large an amount of milk-sugar, an ingredient of milk capable of undergoing fermentation and seemingly somewhat difficult of assimilation in some patients. Sometimes, too, the free administration of milk-sugar induces an excessive diuresis, and this in turn causes thirst, with a result that the stomach is overloaded with an excessive amount of fluid.

In some cases malt soup is useful. This is prepared as follows:

One and one-half ounces of wheat flour is well mixed with a quart of milk and strained through a fine sieve. Three ounces of Loeflund's malt soup extract with potassium carbonate and a quart of water are mixed, and the two mixtures are then combined and cooked slowly for half an hour, when

the mixture is brought to a boil. If the child is as young as three or four months it is best to make the strength of the mixture, both as to extract and flour one-half the above strength.

In certain cases the use of what is known as Eiweissmilch, or protein milk, proves very useful. This is made by adding rennet to a quart of milk, which is maintained at a temperature of about 100 degrees for half an hour. The whey from the curd which is formed is then strained through a cheese-cloth bag without pressure. The curd is then passed through a fine sieve by rubbing it with a spoon, and its passage through the sieve is aided by pouring through the sieve a pint of sterile water. To this mixture of finely divided curds and sterile water is added a pint of good buttermilk and the entire combination brought to the boiling point. Such a mixture when it is shaken contains the curd so minutely subdivided that it looks like ordinary milk. This so-called Eiweissmilch not only provides the child with what may be called a partially predigested food, but is particularly useful, if the buttermilk is pure and is not sterilized by boiling, in those cases in which there is intestinal putrefaction or difficulty in the digestion of the proteids.

THE SEXUAL HYGIENE FAD.

From a recent issue of the *Arkansas Medical Journal* we reprint the following:

The Journal a few months ago commented, editorially, on the extravagances of the Eugenics faddists. Concurrently with that fad is the sexual hygiene fad; and it is gratifying to note that speakers at the National Education Conference—such prominent educators as Ella Flagg Young, in no uncertain terms, condemned the extremists who would have sexual hygiene taught in the public schools indiscriminately to mixed assemblies of boys and girls.

These extremists base their theories on the absurd assumption of dense ignorance of the mysteries of sex existing in our ignorant as well as innocent young girls and boys.

The play, "The Blindness of Virtue," illustrates the lengths to which this false assumption may carry well-meaning people. This foolish play rests on the assumption that a well-bred girl, the daughter of a worldly English vicar, had been reared in such childish innocence of sex that, ignoring all conventions, she saw no harm in visiting, clad only in nightgown and kimono, the bedroom of her lover at early morning, and entering without even the formality of knocking. And this silly stuff had the indorsement of the Bishop of London, just as an equally far-fetched "white slave" motion picture had the indorsement of that eminent reformer, the Reverend Dr. Parkhurst, of New York. These gentlemen doubtless mean well, but they are very easily persuaded by smooth press agents and current faddists that a great moral lesson is conveyed by certain books, plays and pictures, which, in fact, have the opposite tendency.

These enthusiastic faddists entirely lose sight of the force of "suggestion." A rabid minister not long ago preached a sermon on dancing to a mixed congregation of men, women, children and the youth of both sexes into which he introduced, as argument, matter concerning passion, which no one would dare to print. And this, God save the mark, in the name of morality! What he really did was to suggest to his hearers that there were hidden pleasures of the dance to which they were utter strangers, and perhaps prompted them to become acquainted with them.

To attempt to teach sex hygiene in mixed schools is to imbue the students with an embarrassing sex consciousness from which it is impossible to escape.

Certainly the youth of both sexes should be told all that is necessary for them to know. They should be duly warned of the dangers that beset the unwary. But the home is the place to learn those things and parents or near relatives should be the teachers. Or, if such matter must be included in the course of duty, it should be permitted only on the condition that men teachers talk to the boys and women teachers to the girls.

But there's a heap of misconception about the alleged ignorance of youth in the Twentieth Century, as every man of the world and every physician well knows. If, for instance, the innocent young brides knew less, instead of more, there would be less race suicide.

MENOPAUSE NEUROSES

The first principle in the Treatment of climacteric, says *Medical Summary*, is change of scene and environment. The

patient should be taken from her friends, but she should not be sent to travel, because it is now well established that movement from place to place is not only useless, but positively harmful to an unstable brain. She may be sent to the seaside, or, if she lives in town, into the country with one or two cheerful companions, not relations for preference. Let her be in the open air a great deal, but short of physical exhaustion. The great point is to prevent morbid thoughts becoming organized into delusions, and this is done by discouraging introspection and self-examination, and fixing the patient's interest on something outside of her own personal conditions.

For insomnia, the open-air treatment should be tried, or a warm bath at night, but all hynotics should be avoided as long as possible. If drugs must be used, paraldehyde should be given, beginning with half-dram doses and increasing to 3 drams if necessary.

The diet should be plentiful and fattening. Restrictions are only to be placed upon meat, which may be taken in small quantities, but a diet in which meat largely preponderates is distinctly harmful. Of tonics, nux vomica and ammoniocitrate of iron are the best. Often the patient is anemic through profuse menstruation, and then, if there is no excitement, iron should be given, but when a patient is maniacal iron is strongly contra-indicated.

In cases in which symptoms of impaired nutrition are very prominent, massage and the Weir-Mitchell treatment are very useful, and, if there is much stupor, faradic electricity often does good.

THE DOSAGE OF HEXAMETHYLENAMIN.—Dr. Thomson Walker (*The Medical Times*) believes it would thus be possible, by taking two doses of fifteen grains in twenty-four hours and passing water as seldom as possible, to keep the urine in the bladder continuously mixed with a strong solution of formaldehyde. In diseases of the bladder in which frequent micturition is a symptom the period during which the bladder is under the influence of formaldehyde is reduced to about six or eight hours, the time during which the drug is being excreted in quantity by the kidneys. In such cases small doses frequently repeated (seven grains every four hours), will be more effective in giving a continuous antiseptic action. Five or ten grains taken three times daily is the commonly prescribed dose. An increase in the dose to fifteen or twenty grains three times daily will be followed by an increased output of formaldehyde in the urine. In a number of cases under observation no formaldehyde was produced in the urine when the patient was taking five or ten grains, but there was abundance of formaldehyde with doses of fifteen or twenty grains. Or when the formaldehyde reaction was feeble with the smaller doses it became powerful when the dose was doubled or trebled.

The Dietetic and Hygienic Gazette, which is just completing the thirtieth year of its existence, has been purchased by The Critic and Guide Company, and beginning with January, 1915, will be consolidated with *The Critic and Guide*, and the combined journals will be under the editorship of Dr. William J. Robinson. The offices of publication are at 12 Mt. Morris Park W., New York City.

When chlorosis develops in girls whose mode of life exposes them to hard work with lack of opportunities for fresh air, and particularly when these conditions are combined, as they not infrequently are, with scanty or improper food, the first essential is to endeavor to arrange the daily life of the patient on a more rational basis, and the occasional intractability to treatment arises from the difficulty or impossibility of so doing.

NEW BOOKS

DISEASES OF THE STOMACH.

Diseases of the Stomach, Including Dietetic and Medicinal Treatment. By George Roe Lockwood, M. D., Professor of Clinical Medicine in the Columbia University; Attending Physician to Bellevue Hospital, New York. In one octavo volume of 624 pages, with 126 engravings and 15 plates. Cloth, $5.50, net. Lea & Febiger, Philadelphia and New York, 1913.

The author of this excellent book, Dr. George Roe Lockwood, bases his work on the practical idea of grouping his stomach cases, subjecting them to a critical analysis and then tabulating the results. When his results are at variance with older and well established teachings, he has noted this variance, but it

has not influenced him to modify his views.

This book may be described, in brief, as a fairly complete presentation of diseases of the stomach as observed by a practical and observant practitioner, a man who has not become single-sided by reason of practicing a particular specialty. This is a feature that makes this work of distinct value as a guide book for the general practitioner.

The 141 illustrations, scattered through the book, do much to elucidate its subject matter. All in all the book is a very excellent work and well adapted to meet the general practitioner's need for a work of this character.

Nervous and Mental Diseases.

The Modern Treatment of Nervous and Mental Diseases. By eminent American and British authors. Edited by William A. White, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases in the Georgetown University and in the George Washington University; Lecturer on Mental Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C., and Smith Ely Jelliffe, A. M., M. D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System in the Post Graduate Medical School and Hospital; Visiting Neurologist to the City Hospital; Consulting Neurologist to the Manhattan State Hospital, New York, N. Y. Two octavo volumes, illustrated. Per volume, cloth, $6.00, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

This promises to be a wonderfully complete work. The authors have availed themselves of that excellent plan of co-operative authorship—the book's various chapters being contributed by men who not only gained preeminence in their chosen specialty, but, more narrowly still, in a given branch of this specialty. Thus, to mention a specific instance, the subject of sexology in its relationship to nervous and mental diseases, is discussed by Havelock Ellis, the distinguished English writer on similar topics.

The wisdom of dividing up such a large field as nervous and mental diseases among a group of authors, rather than charging the task of covering the field to one or two writers, is to be seen in the clearer understanding the casual reader is enabled to get of a single branch and the better perspective he secures of the whole subject. Put a man on a work he knows and likes best, and the results are best.

A point which is very obvious is the consistent and fairly comprehensive outline of a rational management of mental and nervous diseases, offered by this volume. Another feature—and one largely due to individual authorship—is the clear-cut presentation of various subjects, permitting sharp demarcation between closely related matters. This feature becomes all the more valuable when it is seen that the best therapeutic means, applying to those distinct processes, are given in detail.

The volume before us is number one. The contributors are: Albert Moore Barrett, C. Macfie Campbell, Steven S. Colvin, Henry A. Cotton, Havelock Ellis, Clarence B. Farrar, Frederick A. Fenning, Bernard Glueck, Henry H. Goddard, William Healy, Ernest Jones, James V. May, Adolph Meyer, H. W. Mitchell, R. L. Richards, Thomas W. Salmon, E. E. Southard, John Jenks Thomas, William A. White, the latter of whom, and Smith Ely Jelliffe, are the editors.

The Modern Hospital.

The Modern Hospital, its Inspiration, its Architecture, its Equipment, its Operation. By John A. Hornsby, M. D., Secretary Hospital Section, American Medical Association; Member American Hospital Association, etc., and Richard E. Schmidt, Architect, Fellow American Institute of Architects. Octavo volume of 644 pages with 207 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $7.00, net; half morocco, $8.50, net.

With the multiplication of hospitals, both large and small, in all parts of the country, there has long been an urgent need for a book of this character, a work that would represent the crystallization of varied experience in erecting and equipping hospitals. For the man in a small community who proposes building a small private hospital, the careful study of this book will be of advantage in enabling him to build and equip not only economically but also with an eye to a broader and more successful utilization of facilities. For the superintendent of a large institution, the chapters devoted to administration will be of more than usual interest.

The work covers the entire subject of hospital building, equipment, and operation, and is a volume that could well be added to the library of every man having any sort of an administrative or professional connection with a hospital. It is a book of 644 pages and has 207 illustrations. A unique feature and one possessing merit is the willingness of the authors to give names and addresses of firms making and selling hospital equipment.

This work is the joint production of a medical man, Dr. John Allen Hornsby, and an architect, Mr. Richard E. Schmidt.

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